

The Plough, the Loom, and the Anvil.

VOL. II.

SEPTEMBER, 1849.

No. III.

HEAR BOTH SIDES.—No. II.

THREE months have now elapsed since we laid before our readers "a masterly view of the question" whether or not the farmer and planter were entitled to protection in their efforts to draw to the neighbourhood of their ploughs the loom and the anvil, and the men who use them, thereby making a market on the land for the products of the land. It was copied from *The Union*, the organ of the authors of the tariff of 1846, and we gave it in full for two reasons: first, because we desired that our readers should see the sort of views that, in the estimation of our opponents, are entitled to be considered "masterly;" and second, because we hoped thereby to induce the editors of that journal to imitate our example, and thus enable their readers to "hear both sides," thereafter judging for themselves. In this we have been disappointed. *The Union*, after having volunteered the attack, (its first notice even of the existence of this humble journal,) has never ventured even to refer to the defence.

It was early obvious that its editors were not disposed to go so far in the manifestation of fairness towards their readers, but we still rested in the hope that their correspondent would favour us with a reply, showing what were the reasons that the power of consuming cloth and iron diminished under the compromise act until it reached the lowest point in 1842, and increased with every year of the tariff of 1842, doubling in the short period of its existence. It was an interesting question, and one that could not fail to afford to our friend "Common Sense" a fine opportunity for the display of his ingenuity; and as he had assured us that he had still in store "an impregnable array of facts to bear upon it," we could not doubt that he would avail himself thereof. Here, too, we have been disappointed. "Common Sense" has been as silent as the editors of *The Union*; a fact for which we are unable to account, unless perchance it be that as his first budget of "facts" was abundantly sufficient to convince his readers that his theory was worthless, his second one—the "impregnable array"—proved sufficient to convince himself, and that he has thus become a convert to the doctrines of *The Plough, the Loom, and the Anvil*, without having had the magnanimity to acknowledge it. We wish, however, that he had first exhibited all his facts. It would have afforded us much pleasure to examine them for the benefit of others who, like himself, stand in need of instruction in regard to the "absurd and grotesque" theory that the land and its owner become richer with every step in the approximation of the producer and the consumer.

We have been especially disappointed in all this matter. It was, as we say, early obvious that *The Union*, under its then management, would not venture to republish our notes upon this "masterly view of the question," but when it received an addition to its strength, in the person of the author of the celebrated letters of *Bundelcund*, we felt assured that the long silence would be broken, and that we should have columns of words to prove that every increase in the power of consumption under the tariff of 1842, was to be received as evidence of the impoverishing effect of the protective system, and

that the facts furnished by "Common Sense" did really prove what they were intended to prove, and did not prove the reverse, as we had said they did. Here again we were doomed to disappointment. The new editor of *The Union* proved no more valiant than the old one. "Common Sense" and they have abandoned the field together, after having entered it, preceded by a flourish of trumpets that must have induced their readers to believe that we were to be annihilated on the instant, thus affording another proof that sound and "sense" do not always travel in company. It costs little to make assertions, but much to prove them.

While deserting its distressed friend "Common Sense," and thus manifesting a total absence of that chivalric feeling which usually characterizes the sons of *the ancient dominion*, *The Union* frequently favours its readers with "masterly views" similar to that to which we furnished a reply, carefully avoiding, however, to permit its readers to see the opposite side of the question. One of them is now before us, and as we especially desire that *our* readers should "hear both sides," and thus be enabled to judge for themselves, we copy it in full, together with all that portion of the letter to which it refers that is important on the present occasion. A cause that is to be supported by aid of *selected* facts, or one that can be maintained only by shutting out from view the arguments of opponents, is unworthy the support of honest men. Such is not ours. We would, did our space permit, lay before our readers all that is said on the opposite side, rejoicing in the opportunity to demonstrate the almost universal falsehood of the facts, and hollowness of the arguments.

"The weekly letter of our New York correspondent," says the *Union*, "will be found in another column. It contains matter of great interest both to our manufacturers and to our agriculturists. The export of breadstuffs still continues, and the demand for cotton is sustained at an advanced price and in the face of large supplies. The free trade principles of the revenue bill of 1846 may now be considered as fully vindicated. They have been denounced for years as visionary; but now they have been subjected to the test of experience, and have more than fulfilled the expectations of their supporters. While the market for our agricultural productions abroad has been extended without producing commercial embarrassment by the reception of foreign goods in payment on liberal terms, the great consuming interests of the country have been enabled to become better customers to the manufacturers of the North. We accordingly find, that since the present revenue laws went into operation, our imports have been large enough under low duties to increase the revenues of the government some six millions of dollars per annum. Our export has been sufficiently great to prevent an unfavourable balance of trade, while the general prosperity which a sound commercial and financial policy has occasioned, enables our manufacturers to enlarge their establishments and extend their operations. This latter fact is fully established by the information which our correspondent furnishes; for the statistics which he presents, show that the amount of cotton taken by the manufacturers of the United States has increased more rapidly since the present law went into operation, than it did under the tariff of 1842. Under that tariff the whole increase in four years was 154,747 bales, while it has already—in less than three years—amounted to 130,000 bales under the present revenue laws. This estimate omits the quantities taken from the plantations for the use of the manufactories now springing up in the South, which is estimated at 75,000 bales for the last year, and 100,000 bales for the present year. And it is encouraging to reflect that the labour of the country receives its full share of the benefits which this increased manufacture confers. When manufactures are high, the consumption is limited, and the owners of capital and labour, in the form of machinery, receive nearly all the benefit of production; but when they are low, the consumption is increased, and a much greater amount of the raw material is necessarily consumed, and the labour employed in producing the raw material receives its due share of the value of the product. The operation of this principle is stated with great simplicity and force by our correspondent; and as it is one of great practical importance, we trust none of our readers will fail to give his letter an attentive consideration."—*Union*, June 23, 1849.

"Up to the present time the promise of business prosperity is flattering. The export

demand for produce continues good, and the news by the America to the 9th instant from Liverpool, is of further improvement, and an advance of one quarter pence per lb. in cotton, resulting from the cheerful aspect of the manufacturing districts and the favourable accounts from India, as well as partially by those accounts of damage done to harvest on this side, which are not likely to be fully sustained. The crops of France and England promise well; but there are already accounts of a re-appearance of the potato-rot in Ireland, supported by a continued demand for Indian corn. The political aspect of Europe has not materially changed; and the prospect of any serious military movements on a scale so extended as to disturb the industry of Western Europe for the present year is not imminent; and the probabilities are that the consumption of goods, amid the favourable circumstances for cheap production and the low price of food, will continue considerable, supporting the price of cotton under the large receipts. It is a gratifying feature of our own markets that the free trade principle on which the tariff of 1846 was projected has so far vindicated itself, that the quantity of raw material taken by American manufacturers increases more rapidly under the low tariff than it ever did under the protective scale. The quantities taken by United States manufacturers from the deliveries on the seaboard, are represented in the following figures:—

United States Cotton.—Consumption.

	1848,	1849.
Stock on hand September 1	197,604	144,815
Received to June 14	2,148,431	2,598,581
Total supply, bales	2,346,035	2,743,396
Export Sept. 1 to June 14	1,556,431	2,019,502
Stock June 14	362,374	276,991
	1,918,805	2,296,493
United States consumption	427,230	446,903

This gives an increase of about 20,000 bales for the ten months over the same period of last year. The comparative consumption for several years has been as follows:—

	Bales.	Increase.
1842	267,850	
1843	325,129	57,379
1844	346,744	21,615
1845	389,006	42,262
1846	422,597	33,591
1847	427,967	5,380
1848	531,772	103,805
1849, 10 months	446,903	20,000

“Under the tariff of 1842, the whole increase of consumption in four years was 154,747 bales; and thus far, under the tariff of 1846, the increase is already 130,000 bales, taken from the ports. The quantities of cotton taken from plantation by the rapidly multiplying factories of the South are not here taken into account. Those quantities were last year placed at 75,000 bales, and will this year fall not much short of 100,000 bales. Thus the consumption of the raw material in the United States has now reached a larger figure than the amount taken by British consumers. The enhanced consumption, it is also to be considered, is by Southern and Western factories, which have no protection against the New England factories of immense capital, and which manufactured this year for Southern and Western consumption equal to 535,200,000 yards of cotton cloth, against an importation from England of 17,000,000 yards. The exports of cotton goods of Eastern manufacture were nearly 50,000,000 yards, and re-export of foreign manufacture 10,000,000 yards. Hence the production of Southern and Western factories, being equal to 120,000,000 yards, had to contend against 485,000,000 yards of New England production paying no duties, and 7,000,000 yards foreign paying 30 per cent. *ad valorem*. It is evident that if the South and West have so successfully withstood the free competition of New England, it is out of the power of Old England to affect them at all, while the low prices that have ruled under the free competition have induced a greatly extended consumption of the raw material.

“It is a consequence of selling large quantities of goods at low prices that the producer of the raw material and the operative obtain a larger share of the profit at the expense

of capital. When a great deal of cloth is to be given for a comparatively small amount of money, there is a larger demand for raw material, and for labour to work it up. This increased demand raises the value of both, and the competition lies between capitalists, whose profits are diminished. For this reason it is that tariffs are so eagerly sought by the companies and millionaires. By preventing the competition of foreign capital, prices are kept at such a rate as gauges consumption within the production of the raw material and the supply of labour; both these, therefore, are at the mercy of the manufacturer, and the margin of his profits is great in proportion. The moment, however, capital competes with him, and lower prices, under the continued rivalry of capital, stimulate consumption, the operative and the producer of the raw material are emancipated. On this healthy basis are the factories of the South and West growing up, supported by a steady currency; and they will continue to grow as they have done under the severe competition of the large capital of the East, until the local demand being supplied, the cotton will go down the Mississippi in the shape of cloths, instead of cotton."

The demand for cotton is stated to be "maintained at an advanced price, and in the face of large supplies;" but what is the price that is maintained? Is it not less than the actual cost of production? Has the planter received, on an average, five cents per pound during the season? And can he replace it for less than six? The price had, and has, advanced somewhat, but instead of that advance being "in the face of increased supplies," it was, and is, in the rear of a destructive frost, and of freshets, that threatened to diminish by at least one-third the crop of the present year. Was it not, too, in the rear of a vast reduction of freights, owing to the total failure of the fond anticipations of the late Secretary in regard to the effect of his measures in increasing our foreign trade? Have not freights fallen within a few months almost two-thirds, and is not all this reduction added to the price of cotton? And would they not have fallen, but for the discovery of *California gold*, to a lower point than in any period we have ever seen? And are they not daily falling? At the moment at which we write, the freight upon a barrel of flour to Liverpool is quoted at only 1s., thus showing a great reduction even from the very low point they had reached when last we touched upon that subject, and yet the readers of *The Union* would search its columns in vain for such information. When men find themselves compelled thus to misstate some facts, and omit others, it is because the real facts will not serve their purpose, and because their object is that of mystifying their readers. It is well known that the policy of the government has driven the whole labour power of the South into the production of cotton, the natural result of which has been such an excess of supply that planters are now everywhere seeking to substitute sugar in its place, and it is equally well known that the sugar planter stands more in need of protection than the manufacturer of cloth or iron. It is equally well known that the policy of the country has tended to shut up furnaces and mills, and to drive capital into the building of ships, and that now mills, furnaces, and ships, are all equally unprofitable; but these facts find no place in *The Union*. The whole system is one of exhaustion, as must be any one that tends to separate the loom and the anvil from the plough and the harrow. With all the vast increase of shipping, the earnings of the present year will be, notwithstanding the California accident, less than in any previous one for many years past, and with the all the vast increase of Southern population, the average crop of cotton for last three years is but little more than that of 1840, and the money product is far less, whereas had they consented to take for themselves the protection needed for bringing the loom and the anvil to take their places by the side of the plough, the home consumption would now be double what it is, and the price of that which they could spare for export would also be doubled. We should be glad if the editors of *The Union* would inform us the cause of the great reduction in the price of cotton, and what would probably be the

effect of the consumption of an additional 200,000 bales at home, attended by a diminished necessity for dependence on foreign markets.

We are here told that "the great consuming interests of the country have been enabled to become better customers to the manufacturers of the North," when it is notorious that many of the factories of the North are absolutely stopped—that furnaces have been blown out—and that of sixteen rolling-mills employed in the production of railroad iron, twelve are absolutely idle, and the remaining four are running for the supply of orders received a long time since, before the tariff of 1846 came into *practical* operation. If we look around among the smaller manufacturers, it is everywhere the same. Thus, paper, hats, shoes, books, and all other commodities required for the use of man, are superabundant, and the consequence is that there is little demand for labour. Labour is therefore superabundant, and the labourers are buying little food or cloth, and few shoes or books.

"Our export has been," as we are told, "sufficiently large to prevent an unfavourable balance of trade," but of what has that export consisted? To a large extent of *evidences of debt*. The tariff was to be altered that the market for farmers and planters might be enlarged, and we are now importing large quantities of Polish food and Hindoo cotton, in the form of cloth and iron, and paying for them in certificates of stock, upon which we shall have to pay interest until the day of repudiation comes round again. We are playing over again the same game as from 1836 to 1842, and if it be sufficiently long continued the results will be the same. Our people are everywhere idle, and we import foreign labour. Our food is being everywhere stored up, and we are importing foreign food in the form of cloth and iron. Our farmers complain of the price of food, and they close the mines, the mills, and the furnaces, that men may go West to raise more food and increase the surplus, and thus diminish the price.

The "free trade principles" of the compromise bill were fully "*vindicated*" in the downfall and ruin of 1841 and 1842, as are those of the tariff of 1846 now being "*vindicated*" in the destitution that has fallen upon tens of thousands of hitherto prosperous labourers, in the total failure of the realization of the idea that the market abroad for food and cotton would grow commensurately with an increase in our demands upon Europe for cloth and iron, and in the consequent great fact that we are now contracting an immense debt that must result in ruin, whenever such a change shall take place in the condition of the money market of Europe as shall render it expedient to demand payment of the debt we are now contracting, as will be the case at the next "crisis" in the English money market. We commend to the editors of *The Union* a perusal of the following passage from the "New York Herald," also a free trade journal, but one in the conduct of which "common sense" may very often be found, for its editor has no party to defend:—

"The fall importations are likely to be exceedingly large, and they must be paid for in some way.—Whether there is a demand for foreign fabrics here, or not, our markets will doubtless be flooded with them, and they will be forced off in the usual way, through our auction rooms. The manufacturers of Great Britain must find markets for their goods; and in the present state of Europe, the prospect is more favourable as regards consumption in this country, than in any other part of the world. We may, therefore, expect a very heavy importation; and in the absence of any important demand for our breadstuffs, or advance in prices of cotton, we must rapidly fall in arrears on our foreign trade. The demand for our public stocks, and the proceeds of the sales have added largely to the credit side of our account, and offset a large per cent. of our importations. When this resource becomes reduced, or ceases altogether, and we have to depend entirely upon the proceeds of our exports of merchandise, we shall find a different state of things than exists at this moment, and we may find an outlet for the employment of a portion of our idle capital. *The steady and active demand experienced for such a length of time for our public*

securities, has placed an immense amount in the hands of foreigners, and the semi-annual interest will hereafter amount to several millions of dollars. This will be another drain upon us—a drain which we now do not feel; for the remittances are made principally in stocks, and do not come directly out of the industry of the country; but when ten or twelve millions of exports will be required to pay simply the interest on our debts owed abroad, we shall feel its loss, or rather its abstraction, from our ordinary resources, to liquidate outstanding claims. This is the effect, in a measure, of such a large amount of our evidences of debt being held by foreigners. It is an evil which we are at present favouring and increasing as much as possible, without having a thought relative to its effect."

The great difficulty with most of these professional political economists is that they have no practical knowledge. They have studied so many politico-economical books, that they have by slow degrees arrived at the point at which all men of *real* "common sense" begin, *i. e.* that all trade ought to be free. The latter see, however, that the great and important trade is between man and his neighbour man, and that the small trade is that between far distant men. They see that everywhere men desire to have blacksmiths and shoemakers, cotton and woollen-cloth makers, and iron makers, in their neighbourhood, and that the more nearly they can be brought to them the greater is the facility of obtaining shoes for horses and men, and cloth and iron. They see this desire developing itself on all occasions in a constant effort to bring the loom and the anvil to the side of the plough, and they see almost perpetual ruin following the effort, because of changes of policy abroad, that could not have been anticipated, still less guarded against. Seeing all this, they have arrived at the conclusion that there must exist disturbing causes preventing the possibility of the establishment of universal freedom, but that it may be obtained through the means of effectual protection to the great and really important trade between men and their neighbour men, and they are confirmed in that belief by the fact that those manufactures which have most required protection are now those which least require it. They see that in the desire for freeing the country from the colonial system which prevented the establishment of manufactures, may be found the most important of the causes of our Revolution, and that from that time to the present, the most eminent men—our Washingtons, and Jeffersons, and Jacksons—have seen and felt the necessity for "bringing the manufacturer to take his place by the side of the agriculturist." "In place of feeding the paupers of Europe," said President Jackson, "let us feed our own,"—yet he was fully aware that under natural circumstances freedom of trade among all men, the near and the distant, would be the most profitable to all. He, however, had practical knowledge, of which these men are totally destitute. They are political economists to the point of repeating, parrot-like, the words, "free trade," but beyond that their knowledge does not extend.

Moliere's *Bourgeois* was rich and ignorant. He desired to be instructed, and he took a teacher. Among the earliest of his lessons was that which taught him that he had all his life been talking *prose*. The discovery delighted him, and he would teach his neighbours that they also had been talking prose, and in this effort to make known the extent of his knowledge he proved the extent of his ignorance. So is it with these men. They can say "free trade," and they can press into their service "facts" that they suppose will prove its advantage under all circumstances; but let them meet with difficulty, and they become as silent as our friend "Common Sense," who desired to prove the absurdity of protection by facts which required only to be properly studied to prove its advantage. Similar cases, however, abound, and if our readers desire to find them, they need only refer to the files of *The Union*, the letters of *Bundelcund*, the Patent Office Reports, and the Reports of the late Secretary of the Treasury, the

authors of all of which are living examples of the danger of "a little knowledge."

Among the blunders of this class of men is that which results from the omission of all attention to that most important element in every politico-economical calculation, called *time*. At the end of the first month of his new tariff, the late Secretary set himself to calculating its effects, whereas every man of any practical knowledge knows well that considerable time must elapse before the effects of any such measure begin to be felt. Prosperity does not come or go with the passage of a law, but with its practical operation. The passage of the tariff of 1842 did not remedy the difficulties under which the country laboured, but it enabled men to construct mills and furnaces, by aid of which a state of prosperity was restored. The man who is driven from the mines to seek the West, continues for a year to be a consumer of food and a customer (though on a smaller scale than he before had been) to the farmer, but in the second year he ceases to be a customer and begins to be a rival. The hundred thousand people that have been *driven* to the West this year, will not be felt as producers until next year, and then—and *scarcely till then*—it will be that the farmers of the Union will feel the evil effects of the abolition of the tariff of 1842. All these things are obvious to men of plain common sense, but they have studied few politico-economical books, and they have no theories to maintain in opposition to the common sense of the nation for a hundred years past. They feel under no obligation to teach their neighbours that they have been talking *prose* all their lives, nor to lisp *free trade* without understanding it, as do so many of the *great* men of our day.

The existing tariff—the great measure that was to emancipate labour and capital from the grinding oppression of that of 1842—the measure that was to raise wages, and that has so far depressed them that labourers find increased difficulty in obtaining food, fuel, or clothing—the measure that was to raise the value of capital, and that has so far depressed it that men gladly purchase stocks yielding little more than five per cent. because of the impossibility of employing capital to advantage; that great measure, we say, went into operation, nominally, in December, 1846. Practically, it was almost altogether inoperative. The great railroad speculation of Europe had produced a vast demand for labourers and for iron, and both were high in price. Well-paid labourers consumed largely of food and cloth, while the potato-rot produced a vast demand for food for Ireland, and thus all things were unnaturally high, and as the new tariff was altogether an *ad valorem* one, it followed that duties were high, and sufficiently protective. The railroad speculation broke down, and the demand for labour ceased, and therewith there was a cessation of the demand for cloth and iron, and the makers of cloth and iron were forced to work at diminished wages, and the prices of cloth and iron fell, and then for the first time, at the close of about a year and a half from the first of December, 1846, did the tariff of 1846 come into practical operation.

In the table above given, the cotton crop of 1846-7 is set down, as is usually done, as the crop of 1847, and that of 1847-8 appears as the crop of 1848. The whole business relative to the latter was closed by the month of July of that year, and it was only then that the tariff of 1846 was coming into practical operation. One of the effects of the system, however, had begun to be experienced by the cotton planters. The total failure of credit in England had crippled the merchants and manufacturers of that country to so great an extent that they were unable to continue to act as brokers for the distribution of the great staple of the South, and the price of cotton fell, not because of a surplus in the market, but because the great broker, upon whom the planters had been so determined to depend, had, for the fifth

time in a quarter of a century, become bankrupt. This fall in the price of cotton followed the great demand for food, and the farmers throughout this country were enabled to consume largely of cloth, and the manufacturers were compelled to drive their mills at the highest speed to enable them to meet the demand thus produced at the cost of the planter.

The editors of *The Union* inform us that in less than three years from the adoption of the new system, the increase in the consumption from the growth of manufactures has been 130,000 bales, whereas in the four years of the tariff of 1842 the increase was but 154,000 bales. This we must presume they meant for an honest statement, and that any error in it arises only out of the total deficiency of practical knowledge to which we have before referred; but what are we to think of men who undertake to teach the world in regard to these great questions while exhibiting throughout so many evidences of an inability to comprehend the true state of the case? It is true that they do not commit greater errors in this respect than may be found in the Treasury Reports, all of which are like to that referred to in our last. All of them show that their author had gathered all his knowledge from books that might be wrong or right, and that he did not possess the practical knowledge required for enabling him to discriminate between the right and the wrong.

The crop of the present year, ending with the last of August, is the first that can be considered as subject to the operation of the tariff of 1846, and here we see that, notwithstanding the excessive depression of prices, there is in reality not only no increase, but an absolute diminution. The home consumption of the crop of 1847-8, was 531,000 bales. That of the present year's crop, in ten months, is here given at 446,000, and to make the quantity equal to that of the previous year, it would be necessary that for the remaining period the consumption should continue at the same rate. What probability exists that such is or will be the case, may be judged from the following facts, by which, too, our readers will be enabled to judge of the fairness of the statements offered by *The Union* for the consideration of its readers.

It is well known that when prices are so low as they have been in the present year, the larger operators supply themselves early, and that the subsequent demand is consequently greatly reduced. The effect of this will be shown by the following statement:

Of the crop of 1847-8, there were taken in the first seven months, 281,497 bales,* being at the rate of little more than 40,000 per month, leaving for the last five months, 250,000 bales, or at the rate of 50,000 per month. Of the crop of 1848-9, the quantity taken in the first six months was 307,303 bales,† or at the rate of 51,000 per month, leaving to be taken, to make up the sum of 531,000, only 224,000, or less than 38,000 per month. If our readers will now re-peruse our extract from *The Union*, they will find the whole effect of the article to be produced by comparing the early purchases of the present year, which were *large*, with the early purchases of last year, which were *small*.

The real facts we will now show, made up to the time at which we write:—‡

		1847-8.		1848-9.
On hand in Northern ports, Sept. 1	.	109,909	.	57,997
Shipped to Northern ports	.	619,381	.	759,833
		729,290		817,830
Exported from do.	.	186,892	252,551	
On hand in do.	.	59,317	82,919	335,470
Taken for consumption	.	483,081		482,360

* Merchants' Mag. vol. 18, p. 529. † Ibid. vol. 20, p. 420. ‡ Philad. Com. List, July 28

The quantity taken by spinners, thus far, is shown to be 700 bales less than in the previous year. There remain yet about five weeks to make up the year, and we may now estimate what their consumption is likely to be, by ascertaining what has been that of the few past weeks.

The first six months gave	307,303 = per month 51,200
March 1 to June 14, gave	139,600 = " 40,000
June 14 to July 25, gave	35,000 = " 26,000

The remaining period may give 30,000, but that is exceedingly doubtful, for within a month we have seen notice of the total stoppage of three or four large factories in our own immediate neighbourhood, and the same causes that stop them must tend to produce the stoppage of others. Allowing, however, that 30,000 additional bales will be required, we obtain as the consumption of the year 512,360, against a consumption of the previous year of 531,772, *being a falling off of 20,000 bales in a year, instead of an increase of 20,000 in ten months.*

The consumption and the exportation of cotton cloth for the year, notwithstanding the low prices, will thus fall short of last year not less than 20,000 bales; and then the following will be the result of the years affected by the tariffs of 1842 and 1846:—

	Tariff of 1842.		Tariff of 1846.
1842-3 increase	57,379		
1843-4 "	21,615		
1844-5 "	42,262		
1845-6 "	33,591		
1846-7 "	5,380		
1847-8 "	103,805		
1848-9 decrease			20,000

This, however, tells but a small part of the story. Every one knows that the consumption is greatly affected by the price.

In 1843, the crop was large, (952,000,000 pounds,) and the average price was six cents, the consequence of which was an increase in the home consumption to the extent of 57,000 bales.

In 1844, the crop was only 812,000,000, and the price exceeded eight cents, and yet the home consumption increased 21,000 bales, while that of the rest of the world must have decreased.

In 1845, the crop was 958,000,000, and the price was under six cents, and there was a further increase in the home consumption of 42,000 bales.

In 1846, the crop was 840,000,000, and the price rose to about eight cents, notwithstanding which the home consumption grew 33,000 bales, and thus with a crop but little exceeding that of 1844, the increase in the home demand was 75,000 bales, and the foreign one must have remained stationary.

In 1847, the crop was but 711,000,000, and the price rose to above ten cents, notwithstanding which the home demand rose 5000 bales, the total increase over that of 1842 being 160,000 bales, while the increase in the crop was only about 70,000 bales, showing *the extraordinary permanence and certainty of the domestic market as compared with the foreign one.*

In 1848, the crop was again large, and the price fell to seven cents, and the home consumption increased 103,000 bales, and exceeded by 206,000 the quantity taken in 1843 when the crop was nearly the same, and showing, consequently, a large decrease in the power of consumption abroad.

In 1849, the crop has risen to 1,100,000,000, and the price has fallen to an average of probably $5\frac{1}{2}$ cents, and yet the consumption, so far as the seaboard is concerned, has, *for the first time in seven years*, not even maintained its ground, but has absolutely gone backward, while our population has

largely increased. We should be glad our friends of *The Union* would account for all these facts. If the consumption of 1847, with a crop of 711,000,000, and an average price of above ten cents, increased 5000 bales, what would be the increase of the present year, with a crop of 1,100,000,000, had the tariff remained unchanged? Would it not be at the least 100,000 bales, and would not the abstraction of that quantity from the foreign market add to the price of the whole quantity at least one cent per pound, and would not that put into the pockets of the planters at least \$11,000,000? Suppose, however, that the tariff of 1842 had been adopted as the settled policy of the nation, and that we were now, as we should be, consuming 250,000 additional bales, would not the price of the whole crop be ten cents instead of five, and would not that give to the planters \$55,000,000? And is not that the price they are now paying for their determination not to consume on the land the products of the land?

We are told, however, that the Southern factories are growing in number. They are, and we rejoice to see it. The tariff of 1842 gave the impetus to this movement, and it now goes on, requiring "no protection against the New England factories of immense capital," because aided by New England machinery and New England skill, dearly paid for by New England men who have had to bear the weight of the enormous changes of our system during the past twenty years, by which tens of thousands have been ruined. They *have* no protection against *New England*, but they *have* protection against *Old England*, and *without it they would scarcely continue in existence for a month, for without it the whole South would be inundated with cheap and worthless goods, and their markets would be ruined.* The planter requires protection for his sugar and his cloth, quite as much as his Northern neighbour.

We are here gravely assured that the consumer benefits largely by the low prices, but whence come the low prices? Is it not from the depression of the South? And can the South consume as much cloth with cotton at five cents, as they could do at ten? Certainly not. The South is now clothing the world at its own loss, by selling its cotton at less than the cost of production, and the power to consume cloth is there diminished, and would be still more so, were it not that it is to a certain extent maintained by the introduction of a new species of employment, that would long since have been naturalized there had the plough, the loom, and the anvil been permitted to come together. The consumption of the North diminishes, notwithstanding a vast increase of population, and notwithstanding the great diminution of cost, and it does so because the people who worked in mines, and furnaces, and mills, are idle and unable to sell their labour to obtain the means of buying food, or cloth, or iron.

Every increase in the ratio of consumers to producers tends to raise the price of food and cotton, and of all other agricultural products, and to enable farmers and planters to consume more largely of cloth and iron, shoes and hats, paper and books, and the producers of these latter commodities are thereby enabled to consume more largely of food and cotton, and thus it is that the owner of land benefits by an increase in the home consumption of the products of the land. Every man that is *driven* to seek the West, there to raise food or cotton, tends to diminish the power of farmers and planters to consume cloth and iron, and to diminish the power of the makers of cloth and iron to consume food or cotton, and thus it is that the owner of land is injured by a diminution in the home consumption of the products of the land.

We now ask of the editors of *The Union*, and we ask it as a favour—in the absence of their friend "Common Sense,"—that they would explain the

following facts by aid of the "principle" that is, as they say, "stated with great simplicity and force" by their correspondent :

In 1842, we imported little, and were unable to pay the *interest* on our foreign debt.

In 1846 and '47, we imported largely, and paid off much of the *principal* of our debts.

In 1849, we import about the same amount per head, *and run largely in debt*.

In 1846, the demand for labour was great, and men consumed largely of coal, the production of which trebled from 1842 to 1847. In 1849, men are unemployed, and the consumption of fuel is stationary.

From 1842 to 1847, the consumption of iron doubled. In 1849 it has become stationary.

From 1842 to 1847, the consumption of cotton and woollen cloth was doubled. In 1849 it has become stationary.

In 1846 and 1847 there was universal activity. In 1849, there prevails a "masterly inactivity," because houses and ships, and roads and mines, and mills and furnaces, have ceased to be profitable. Capital, food, cotton, wool, cloth, sugar, shoes, paper, and all other commodities needed for the convenience and comfort of men, are surplus, and the universal desire is to diminish production to the level of consumption, while tens of thousands of labourers can purchase neither food nor clothing. The "war against labour and capital," agreeably to the doctrine of *The Union*, has ceased, but with each successive day labour and capital become less productive.

We should really be glad to see all these curious phenomena explained, and would most respectfully ask the editors of *The Union* to commence the explanation by copying our reply to their friend "Common Sense," with their comments thereon, which we promise faithfully to republish, for we feel desirous to make our readers perfectly familiar with the shallowness of doctrines that require to be supported by aid of a constant perversion of facts.

In conclusion, we would beg to invite their attention to the following passage, by a writer of eminence* belonging to their own school :—

"If a political economist finds himself puzzled by any recent or present commercial phenomena ; if there is a mystery to him in the late or present state of the productive industry of the country, which his knowledge of principles does not enable him to unriddle, *he may be sure that something is wanting to render his system of opinions a safe guide under existing circumstances.*"

Let our opponents explain the facts we have given them, if they can. If they cannot, let them admit that "something is wanting to render their system of opinions a safe guide under existing circumstances."

P. S.—At the moment when this article is going to the stereotyper, we have received a number of *The Union*, containing a short editorial to which we think it worth while to invite a moment's attention on the part of our readers. When we pointed out the extraordinary blunder of "Common Sense" in asserting that "if the whole cotton, woollen, and iron interests of England were transported to this country, they could not consume the surplus grain and provisions consumed by American farmers," we little expected to have it repeated by any one claiming to possess even the slightest knowledge of the subject, and yet here we have it again, and this time it comes from the editors themselves !

"If all the operatives employed in the cotton, woollen, and iron manufactories in

* J. S. Mill.

England were transported to the United States, *they would not be able to consume our surplus food*; and if we had enough of men and machinery to manufacture all the cotton produced in the United States, it would not add enough to the consumers of flour and corn to consume half the surplus which we raise. Besides, it would compel the manufacturers of cotton themselves to seek a foreign market for at least \$100,000,000 in value of their manufactures. And should not they, too, have a home market for their products? Certainly they are by right as much entitled to it as the farmer and planter, for whose interests *they profess such tender affection*. How idle, then, is it to talk of a home market for the various products of this vast country. Yet we have many superficial philosophers who imagine that they can fix the machinery by which all our immense interests can be equalized and made to harmonize. They can never be equalized, and they can be made to harmonize only by letting them alone.

"Not many years since the hobby of the protectionist was to protect *manufacturers*. Now, since the manufacturers have become nabobs, with princely incomes, their theory can be carried out only by furnishing a home market; or, in other words, protecting the *farmer and planter*. They do not care so much, now, about protecting the manufacturer, but the *farmer* must be protected. He will get such protection from these pretended friends 'as vultures give to lambs, covering and devouring them.'"

Thus is it ever with these men. Reckless assertion is made to take the place of argument, and the assertions of no two of them, nor of any one of them for any two periods of time, can be made to correspond. The late Secretary is of opinion that if protection be established, the time is not far distant when the manufacturers will be clamorous for perfect freedom of trade. The editors of *The Union* think that they will not. If these professors of political economy could only master the A B C of the science they undertake to teach, they might now and then—at long intervals—agree with each other, or with themselves.

In conclusion, we would beg to recommend to them a perusal of the following statement of facts as they now exist in Tennessee, after which we should be glad they would furnish replies to certain questions addressed by us, in May last,* to the Editor of "*The Nashville Union*," and still *unanswered*.

"How is it in Tennessee? The census shows that we have 275,000 persons employed in agriculture, and but 17,000 employed in manufactures and the trades. What an unequal division of labour is here! Contrast it with Massachusetts, where 87,000 persons are employed in agriculture, and 85,000 in manufactures. In Tennessee we make a vast surplus of the bulky products of agriculture to transport to an inadequate and distant market. In Massachusetts a good home market is provided for their home products—consumers are placed side by side with producers. What is the result to the agricultural interest? In Nashville the average exporting price of Indian corn, our chief staple, is 20 cents per bushel—in Boston and Lowell, and elsewhere through Massachusetts, Indian corn averages 70 to 75 cents per bushel; and even at that high price, other products of labour are much more profitable than corn is, imported into Massachusetts. In Tennessee the average value of land per acre, as shown by the official returns to the Comptroller's office, is but \$3.03—while in Massachusetts, leaving out certain commercial counties embracing Boston and other commercial towns, where the value of land is greatly enhanced, and taking only the agricultural counties, where land is lowest, and the average value of land per acre (as shown by official returns) is \$15.75. What a difference! In Lowell, labour is paid the fair compensation of 80 cents per day for men, and \$2 per week for women—while in Tennessee the average compensation to labour does not exceed 50 cents per day for men, \$1.25 per week for women. Such is the value of a wise division of labour! I beg that the farmers of the country will ponder these facts, and others of like character which little investigation will disclose, but which I cannot now take time to dwell upon.

"Our great error is, we have provided no 'market on the land for the products of the land,' and our surplus produce literally sells for nothing. Corn, here, selling at 20 cents, we ship to New Orleans at a cost (for transporting, sacks, sacking, shelling, drayage, commissions, and charges) of 56 cents a sack, or 22½ cents per bushel, which makes

* See Vol. I, p. 674.

42½ cents at New Orleans equal to 20 cents at home. The actual average price in the shipping season of 1848, from 1st December to 1st April, at New Orleans, was, as nearly as I can ascertain it, 42 cents. So, nothing is made by shipping it to New Orleans. Cost of transportation and other charges in shipping from New Orleans to Liverpool, is ordinarily about 50½ cents per bushel, which, put to the cost to New Orleans, 42½ cents, makes 93 cents per bushel at Liverpool equal to 20 cents at home. In September, 1847, corn sold at Liverpool at 84 cents; in January, 1848, at 80 to 90 cents; and in December, 1848, at 69 cents per bushel. It is thus shown of what value the Liverpool market is to us. England gets our grain in bulk, but at no remunerating price to us. For the fiscal year 1848, the United States supplied food to Europe to the value of \$37,724,543, but at what prices, our money pressures will explain to those who care not to examine more definitely the prices current.

"Such is the depression in prices, that the whole exports of Tennessee do not exceed, as is believed, \$8,000,000 per annum, while the imports of foreign merchandise, as shown by official returns at the Comptroller's office, amount to about \$10,000,000 per annum. How is this annual balance against us, of probably \$2,000,000, paid? The plain answer is by bankruptcy and with specie—by deductions from the nett gains of labour—a continued, heavy, blighting drain upon the prosperity of the State. Let it not be said 'we buy too much—we must buy less.' That is an impracticable argument—we cannot correct the evil by persuading our people to 'buy less.' They will still go on to buy what their supposed necessities or their customary indulgences require. But we can contrive to pay them better for their labour, and thus enable them to buy more and still have a large surplus profit. Massachusetts has done this: she produced in 1848 from the labour of her manufacturers, (85,000 persons in 1840,) products to the value of \$52,000,000, while in the same year Tennessee produced, from the labour of her agriculturists (275,000 in 1840,) products to the value of \$40,000,000. See the difference, in the return for labour! The last year's crop of Indian corn in Tennessee is estimated at 55,000,000 bushels. At 20 cents, this is worth \$11,000,000; but had we the division of labour found in Massachusetts—had we home consumers for this home product, at 70 cents per bushel, as in Massachusetts, its worth would be \$38,500,000, a clear gain to the productive industry of the State of \$27,500,000 in the single article of Indian corn, and which alone would turn the balance of trade largely in our favour.

"The annual demand for \$10,000,000 exchange, to pay for merchandise introduced, keeps our Tennessee banks under a constant strain. Their paper is, in consequence, at an average discount at 4 per cent. in the Eastern cities, as quoted by "The Bankers' Magazine" for all 1848-9. If they fail, therefore, to supply exchange, the merchants, in self-defence, will present their paper, and draw and ship the specie to pay for goods, rather than submit to this heavy loss, which it is obvious would soon prostrate the banks. The banks are therefore forced to provide exchange, with which to supply payment for the heavy importations of merchandise—which they do at an average of about 2 per cent. discount—but they can only make exchange out of produce and miscellaneous commodities shipped abroad, and as our exports (\$8,000,000) fall short of our imports, (\$10,000,000,) there is ever a shortness of exchange and a heavy pressure upon the banks. In this single item of loss on exchange, at 2 per cent., on \$10,000,000 importations, there is a loss to the productive industry of Tennessee of \$200,000 per annum—about double the annual State tax heretofore, upon the whole taxable property of the State. This is not all. In this state of things, our State banks are only able to declare 4 per cent. dividends, and they do not always do that, while no one knows or can precisely tell what our State bank is realizing. In Massachusetts, where the exports exceed the imports, where exchange runs in their favour, the local bank paper is at par, and the banks in 1848 averaged dividends of 7½ per cent. I select Massachusetts for comparison, because the contrast is striking. The same contrasts are furnished in other States, in proportion as there is a wise division of labour.

"And the contrasts that appear between States of the Union, may be traced more minutely between counties of the State. Compare the counties in Tennessee, where labour is divided, with the strictly agricultural counties. Compare Davidson county with Mauray—Shelby with Obion. In Obion, where the soil is ten feet deep, but where there is no division of labour, the average value of land per acre, is \$2.11. I have not time to dwell on the many details that here crowd upon the mind; but who does not perceive at a glance, that the obvious interest of the farmer is to plant by his side every class of working population which purchases and consumes his products?

"It is the policy of the legislation of the State, therefore, to encourage Domestic Manufactures and Internal Improvements; to foster the various honest handicrafts and mecha-

nic arts; to take care of the agents and of the elements of commercial prosperity; to develop the vast, but comparatively unopened, mineral resources of the State; to give liberal charters to manufacturing companies; to seek to introduce new classes of labour; additional numbers of labourers, whether in the arts, professions, or workshops, in navigation, mining, or commerce, which will aid in building up a 'market in the land for the produce of the land,' by bringing 'the plough, the loom, and the anvil' together.

"How strange it seems, then, that instead of such enlightened general policy, our State legislature has seemed to be rather characterized by a disposition to discountenance, to frown upon, to fetter, burden, and oppress, all productive classes which promise to become the customers and consumers of the farmer's produce!"—*Address of Mr. Zollicoffer, of Tennessee, to his constituents.*

TO MAKE GOOD COFFEE.

FIRST procure the best coffee in the market, wash it very clean, and roast it to the colour of golden brown, but not a deeper shade, by any means. Then take the whites of three eggs to each pound of coffee, mix very carefully with the coffee while warm, and immediately transfer to earthen vessels, tying them over with bladders to render them air-tight. Take from these vessels sufficient coffee for one making only at a time; grind it, place it in a fine muslin bag, suspend it about midway in the pot, turn on the boiling water, and put on the cover to prevent the escape of steam. By this mode the coffee will be very strong, but it is best to reduce it by the addition of boiling hot milk, when it will form a most delicious beverage, very different, indeed, from that which is produced by boiling the ground coffee in water. And to be convinced of the fact, that, by the above method, which is simply infusion, all the virtues of the coffee may be obtained, it is only to take the dregs left in the bag and boil them in water for a considerable time; the result will be, a black, bitter, nauseous, feverish, woody extract, without a trace of the fine flavour of coffee, and answering to the name by which it was known on its first introduction into use, according to the account published in the eighth volume of the "Harleian Miscellany," namely, "the devil's black broth!" The making of tea is by infusion, not decoction. Who ever thinks of boiling tea?—*Farmer's Cabinet.*

Salting Hay.—We have often cautioned farmers against salting their hay too profusely. No more salt should be put on hay than animals would voluntarily consume while eating it if the salt was given to them separately. We are astonished to find, in a valuable agricultural journal, advice to add ten or twenty quarts of salt to a ton of clover or hay, which will aid in preserving it, if rather green.

The largest quantity—twenty quarts to the ton—would be about twice the amount given to a horse in a year, at the usual allowance of an ounce per day, or half a pound per week. Four quarts of salt to a ton of hay, is as much as animals commonly consume when they have their own choice. Hay is greatly injured by the use of large quantities of salt to save it, when put into the mow only partially cured; and in some cases, diseases and death among stock have been the consequences of a too liberal use of salt as a preservative.

How would a man like butter with four ounces of salt to the pound, in order to save it without the trouble of working out the buttermilk? We have been particular on this subject, as dealers inform us that much hay brought to this market is injured by over-salting, for the purpose of saving when housed too green.—*New England Farmer.*

ON THE BEST TIME TO CUT GRASS FOR HAY.

Troy, Miami County, Ohio, June 23, 1849.

THERE is one question of great importance to the farmer, in regard to which I have not been able to find any direct authority for the conclusion to which I have arrived, upon general principles. It is this:—At what period of its growth should grass be cut in order to make the best hay? Having had some grass to cut this season, I had resolved to do it at the time it should commence coming into bloom. This much settled, I began to hunt up the authorities to sustain that resolution. These I expected to find in the analysis of fodder plants, made at the different stages of their growth. But, to my surprise, no such thing was I able to find. Von Thäer, Liebig, Bousaingault, Johnston, all failed me on that point. I was the more anxious to obtain this direct proof, inasmuch as it is the almost universal opinion of the farmers here that hay should not be made until the great mass of it has matured its seed. My grass was cut, however, but not quite so early as I proposed, as the greater portion of it was in bloom. Almost every one who passed the lot asked if I was not cutting the grass too green. The answer was, generally, that I wanted to make hay of it, not straw. Public opinion, (which is no small matter now-a-days,) you see, is decidedly against me, and unless I can get some direct and positive proof to sustain me, my theory and my practice will be put down by an overwhelming majority. And probably if I had that kind of proof, it would be about the same thing, as “it’s nothing, only book farming, any how.”

I have reasoned upon the subject in this way:—As the seeds form, the stem becomes hard and woody. Why is not the straw of oats which has been cut as soon as the grain is perfected, as good fodder as timothy cut at the same period of its growth? And why is it that in order to make sugar from corn-stalks, it is necessary to pluck off the ears as soon as they begin to shoot? But it may be answered that oats and corn are different from the grasses. Not at all, in my opinion, so far as this question is concerned. Oats, if cut just before the formation of the seed, would make very good fodder, containing as much nutritive matter as hay. If, however, it were true that the principles of nutrition are most abundant in plants after the formation of the seed, then is presented the question whether it is not more advantageous to produce and gather and feed out grain and straw in the usual mode than in the form of ripe hay.

If the analysis of which I have spoken has been made, I should suppose that a more general knowledge of it would be of some benefit to the agriculturist. If it has not been done, it should be immediately undertaken by those (and the more the better) competent to the task, and the results made known.

Truly yours,

WM. J. THOMAS.

Want of time and opportunity—any thing but want of respect, or want of appreciation of the interesting nature of the question it raises—must plead our excuse for not sooner attending to the above. The *time of cutting*, and manner of curing hay, are influenced by various considerations—as, the kind of grass, the climate generally, and the particular state and promise of the weather at the time.

It is on the first point only that our correspondent seems to desire more exact information. For that, we should have turned to our favourite author, Von Thäer, but that we see his valuable work enriches the library of the writer; and moreover, that he is far from being full on the subject. We have not time, at the moment, for more extended research, and can therefore now only give what follows, as being more apposite and exact than any thing that occurs to us. It is to be regretted that the experiments here detailed relate to a grass not commonly cultivated with us, instead of timothy, (*Phleum pratense*), and others; but when we have more leisure, we will pursue the inquiry, in the hope of

finding information equally applicable to grasses more generally known, and of giving directions for curing and preserving hay generally, which may prove acceptable and useful to subscribers, whose numbers are, we are glad to announce it, increasing as fast as at any time since our (first) systematic attempt to bring "the plough, the loom, and the anvil" into close proximity.

What follows, made part of a "Government Report," published in England, in 1846.

On the whole, we believe, as we have always contended, that the reasoning of our correspondent is correct, and of course that practice should conform to it.

"*The Chemical Nature of Grass and Hay as Food for Cattle.*—By ROBERT D. THOMSON, M. D., Lecturer on Practical Chemistry in the University of Glasgow.—Grass, as may be readily imagined, varies very considerably in its composition, according to its age, and also, as may be expected, according to its species. The experiments undertaken during the present investigation have sufficiently demonstrated the first of these positions. But the second is still open for inquiry, since chemists who have previously analysed grass and hay have omitted to particularize the botanical names of the plants which they have examined. The grass used in the present experiments consisted almost entirely of rye-grass, (*Lolium perenne*), and the hay employed was also similarly constituted. The amount of solid matter in this grass varied from 18 to upwards of 30 per cent., according to the early or late period of its growth. The grass made use of in the first experiment contained from 18 to 25 per cent.; and in our calculations the latter number has been adopted. When grass first springs above the surface of the earth, the principal constituent of its early blades is water, the amount of solid matter being comparatively trifling; as it rises higher into day, the deposition of a more indurated form of carbon gradually becomes more considerable; the sugar and soluble matter, at first increasing, then gradually diminishing, to give way to the deposition of woody substance. The following table affords a view of the composition of rye-grass before and after ripening:—

	June 18.	June 23.	July 13.
Water	76.19	81.23	69.00
Solid matter . .	23.81	18.77	31.00

"These are important practical facts for the agriculturist; for if, as we have endeavoured to show, the sugar is an important element of the food of animals, then it should be an object with the farmer to cut grass for the purpose of hay-making, at that period when the larger amount of matter soluble in water is contained in it. This is assuredly at an earlier period of its growth than when it has shot into seed; for it is then that woody matter predominates—a substance totally insoluble in water, and therefore less calculated to serve as food to animals than substances capable of assuming a soluble condition. This is the first point for consideration in the production of hay, since it ought to be the object of the farmer to preserve the hay for winter use in the condition most resembling the grass in its highest state of perfection. The second desideratum in hay making is to dry the grass, under such circumstances as to retain the soluble portions in perfect integrity. To ascertain whether hay, by the processes and exposure which it undergoes, loses any of its soluble constituents, the following experiments were made."*

In a modern work, by a scientific author entitled to great respect, it is said, as to the time of cutting hay: "The period at which the crop should be cut down when it is intended for hay, is just when the plants have attained their full size. At this period they will be coming into flower, and if afterwards allowed to remain uncut for any length of time, they will be deprived of much of their juices, which are consumed in bringing the seeds to maturity, the crop becoming, at the same time, greatly more exhausting to the soil. The flowers of the plants should not, in any degree, have begun to fade before the crop is cut down."

Oil of Sunflower Seeds.—A gentleman stranger called some days since, to inquire if we could point him to information on this subject. We referred him to some in various works, but told him if we had time just then for the search, there could be found something more ample and specific in the old "American Farmer." Soon after he went out, we found such an article in the third volume, which, if we knew his name, we would inform him, can be seen at the office of "The Plough, the Loom, and the Anvil."

* These we shall give hereafter, when we have space at command.

THE SUGGESTION BY LIEUT. MAURY, OF AN INDUSTRIAL CHART.

HAS anybody ever "calculated," as we Americans say, the advantages of railroads and steamboats, in the saving of time, by enabling men to *read and write*, when they have grown old, out of the knowledge of 999 out of 1000 travellers, instead of knowing, as they once did, the half of all they meet? With a book, and pen, ink, and paper, which fortunately every man can carry in his pocket, instead of being jammed up in a coach, with nine passengers and two by the driver, besides children and bandboxes, sweltering along, covered with dust, and annoyed with blasphemous drivers, as was the case thirty years ago, making four or five miles an hour,—how great is now the contrast! Now you need not lose a minute longer than while the boat or cars are getting under way, and in that little interval you are moved to mirth or sorrow, according to your temper, in witnessing the horror of some poor fellow who arrives just—*one half-minute too late!* To stand on the wharf of this goodly city of Brotherly Love, and watch for such occasions of curious sympathy, is said to be the favourite expedient of a certain friend, whose *sombrero* is of the broad-brimmed order. Living on his money, with nothing else to do, he finds in that his most agreeable occupation! What a taste! For men, thus running to the place of departure, out of breath, "*only one minute too late,*" we never had any sympathy, unless accompanied by a woman, (God bless them all!) and then we do wish the boat or the car would put back, although there are ten chances to one their detention was caused by those numerous and nameless *little* delays which generally accompany the departure and separation of ladies, even from their most intimate friends, whom they see every day. When you hear them say "good-bye,"—"farewell,"—make up your mind to wait half an hour; for bonnets are still to be tied—shawls to be adjusted—gloves to be pulled on, and so many last words at parting, that one hardly knows when to make sure that you are fairly under way. But all this aside. What would men do without women? To return—we lately left Baltimore in a steamboat, provided for the usual emergency, of late years, of having no acquaintance to catechise or talk to; when, to our agreeable surprise, there was one of the sons of our gallant and noble old friend, Commodore Porter—a zealous contributor, by-the-by, to the old "American Farmer,"—a son whom we had known as a child, now surrounded by *his own children!*—And among the men whom we most desired to know, and were prepared to cultivate, as we would everywhere woo the spirit of useful knowledge, there was LIEUT. MAURY, the Superintendent of the National Observatory, whose scientific propensities and acquirements are so widely known. Now, reader, can you imagine what there could be fished out of such water for the benefit of the plough? You may be sure we were not long in throwing our line, with such poor skill as we possess; and what think you we brought to the surface? Why his suggestion of an

INDUSTRIAL MAP OF THE COUNTRY,

to be constructed out of the materials of the census about to be taken—a series of maps, which shall show at a glance, and with regard to every subject, all the information that the census returns can give.

In other words, instead of presenting, as he said, the census statistics in tabular form and in indigestible masses of figures, he proposes to present them to the eye on a chart, after the fashion of his wind and current charts,

by which great services have been rendered to practical navigation. These charts show at a glance to the navigator, in whatever part of the ocean he may be, the experience with regard to winds, weather, and currents, not only of each individual navigator who has been in that part of the ocean before, but the results of the combined experience of all.

It would be quite as easy to present all the statistics of the census upon a system of charts in such a manner as to show the bearings of each class of facts upon all the rest, as it is to represent all the phenomena of the winds and the waves of the sea in such a manner as to be exhibited at a single view, and comprehended at a glance.

To illustrate the plan of an industrial map such as is proposed—let us take the series of statistics which relate to the density of population, to the average of individual wealth, to the average value of lands by counties, and the like.

Take a map of the United States, and draw on it in black, a line which shall separate those portions of the country which contain more than 20 or 30 or any other number of inhabitants to the square mile, from those portions which contain less. Suppose the line of 30 inhabitants to the square mile to be thus drawn; now take 20, and by another kind of line show those belts, bands, and portions of the country which contain between 20 and 30 inhabitants to the square mile; with other lines, show the parts which contain from 10 to 20—from 5 to 10—from 3 to 5—from 1 to 3. The chart in this condition would look like a chart in which the depth of the sea for every additional 1, 2, 5, or 10 fathoms is represented by lines.

Now take the average value of land per acre by counties—separate by blue lines, drawn in like manner, the land that is worth \$20 or more per acre—and so on for every \$5, down to \$5, and then for \$4, \$3, \$2, and \$1.

Then take the average of individual wealth by counties, and represent that for every \$50—from \$400 down to \$100—in red lines.

Next take the per centum of lands that are enclosed or cultivated, and represent them for every 10 per cent. from 100 to 10 or 5, by green lines.

In like manner the per centum of the population that is engaged in agriculture, may be represented by yellow lines; the per centa of those engaged in manufactures, commerce, mining, &c., each by lines of different colours or characters, as dotted, continuous, broken, and the like. In this manner many other statistics may also be presented on the same sheet, and thus the statesman would have arranged, grouped together, and presented at one view, an amount of information and a system of facts, with their bearings upon each other, which he can acquire in no other way.

This sheet may still be extended so as to show, without the least confusion, the agricultural staples of every part of the country. Thus, represent cotton, for instance, by a leaf; sugar by a plant; hemp by a reed—all printed in green. Wheat, corn, and the cereal grains, by red, or by some other colour, or by other symbols—so with potatoes, peas, beans, hay, &c.

Now see the information that this single sheet would contain, and which any one could see at a glance, and gather in a few moments. Taking the lines indicative of individual wealth, and comparing them with the lines showing the per centa of persons engaged in agriculture, manufactures, &c., we should see the relative proportion of people that it requires to be engaged in each one of these grand divisions of labour, in order to produce the highest average of individual wealth. In other words, the chart would show us exactly how close the "plough, the loom, and the anvil" ought to be brought together; and not only that, it would show what are the most remunerating staples, and would present besides a great variety of new facts, interesting combinations, and valuable inferences.

In Professor Tucker's "Progress of the United States," page 126, will be found diagrams of this sort, confined, however, to the purpose of showing to the eye the inequality of the States in population and political power; their different rates of increase, and the comparative areas of the five great local divisions of the New England, the Middle, the Southern, the South-western, and the Western States. It will be seen to what a variety of objects of national importance Lieut. Maury would carry out and apply the same idea: and why not a chart of agricultural productions as well as of geological and meteorological facts and phenomena? May we be excused for commending the suggestion to the attention of the Board of Census, which has a great work before it, well worthy of the anxious regards of men ambitious of distinction for knowledge well directed.

THE SUGAR INTEREST.

THE profits resulting from the culture of cotton have disappeared, because the planters of the South have for twenty years insisted upon a policy that has tended to compel hundreds of thousands to fly to the West, there to become producers of food and cotton, that would gladly have remained at the East, consumers of both, and customers to the farmer and planter. Driven from cotton, the planters now try sugar, while their representatives in Congress combine for the purpose of breaking down the men who now consume food and cotton, while making cloth and iron, and thus diminish their power to consume sugar. What are the effects as now visible, and as they are likely to continue so to be, are shown in the following article, to which we invite the attention of all our readers, and not alone those of Louisiana, for the interests of the agricultural population of the Union, whether producers of corn or sugar, of cotton or wool, are one and the same:—

THE INCREASE OF IMPORTATIONS.—A thousand facts develop the unfortunate tendency of the anti-protective policy urged upon the country by Mr. Walker, and the necessity of some modification of the wild scheme which he forced upon an unwilling people. The character of the present head of the Treasury Department gives us promise that more enlarged, enlightened, and patriotic counsels will be recommended to Congress at the next session; the responsibility will rest with that Congress, and the consequences with the people.

The people, however, should be made acquainted with the facts which bear upon the question.—The men of the mine and the furnace should know that the iron—manufactured railroad iron—brought into this port by the Saranak, has been sold for \$47 per ton; imported at that price, to be carried to the vicinity of our most efficient and best-conducted furnaces. It is needless to add that the article cannot be produced in this State at such a price, without levelling the labour of freemen to that of the unfortunates who toil at the English furnaces. This is a fact for Pennsylvania. Let it be considered.

Other States have equal interests. Louisiana, if not insane, cannot hesitate to unite with Pennsylvania in favour of a proper modification of the tariff. The crevasse that pours the flood of the Mississippi through her plantations, cannot be more destructive than the operation of the tariff of 1846. We ask attention to the following table, which has been made up from official sources, and may be relied upon. It ascertains the fact that, against the storage of sugar at this port, last year, of 482 tons, there is, this year, the enormous amount of 4004 tons. If the planters of Louisiana are satisfied with this result, there is no reason which will justify discontent with us, except that, in wounding that interest, it affects all. Let our friends at the South study the facts, and judge for themselves:—

Storage of Sugars in Philadelphia, from May 15, 1848, to June 15, 1848.

576 hhds. sugar, weighing	432 tons.
150 boxes " "	30 "
57 tierces " "	20 "
Total	482 "

Storage of Sugars from May 15 to June 15, 1849.

5950 boxes sugar, weighing	1140 tons.
3270 hhds. " "	2452 "
252 tierces " "	90 "
212 bbls. " "	22 "
3726 sacks " "	300 "
Total	4004 "

Need we tell the sugar planter what this *storage* means?—It means that there is want of consumption, and therefore it is stored away, just as the coal and the iron-ore are stored away in the coal mines and the iron banks; but if the coal-heavers and the iron-miners had full work and full pay, they and their families could consume double as much sugar as they now do: and so could the wool-grower and the cotton-grower, and the ship-builder and the house-builder, and all that depend on their labour. The policy which gives encouragement and support to *non-cultivators* of the soil, insures the best return to the labour of those who cultivate the soil; and the people—thank heaven, not sworn partisans, but *the people*—are beginning to understand this common-sense view of the matter, leaving uncommon sense for the use and behoof of the politicians.

EMERSON'S POINT.

PREMIUM FARM, TALBOT COUNTY, MARYLAND.

It would be impossible to notice in this journal, however briefly, all the numerous accounts that reach us, giving the details of proceedings at agricultural societies' exhibitions, in all parts of the country; nor is it desirable, to the exclusion of new facts, or of matter which conveys *instruction* to the mind of the reader, and either indicates or prompts him to seek useful knowledge, wherever it may be found. But *reports* like that which accompanied the award of the highest premium to *Emerson's Point Farm*, in Talbot county, commend themselves to our notice by the force of agreeable associations connected with its locality, and the old familiar names introduced into it. In truth, no report can be without value which shows to the young farmer how any man may, by intelligent, persevering, and otherwise unaided industry, begin the world on a poor farm, rear a family in comfort and respectability, and at the same time gradually enrich his land and attain to independence. At what higher goal need any honest ambition aim? What better, what more beneficent example can any man set to society in any field, than in the field restored from barrenness to fertility by his personal industry and skilful management?—thus shaming the slothful, encouraging the despondent, arresting the deserter in the act of flying from his paternal acres. Securing, in a word, by economy, diligence, and forethought, happiness and abundance for man and beast, where all had been exhaustion, poverty, and ruin! How, with the merit of such men, can we compare that of the Western farmer, who has but to plant his corn, go to sleep, and hear it crack as it grows at the rate of 100 bushels to the acre!*

*Report of the Committee, on awarding the first premium to W. HAMBLETON,
for management of Emerson's Point Farm.*

This farm, to which the highest premium was awarded last autumn, lies near the mouth of Miles river, emptying into the Eastern branch of the

* Mr. John Laughry of Ohio, gives in *Bateman's Cultivator*, an account of his making 140½ bushels to the acre, on eleven acres. The New York State Agricultural Society offer their premium for the largest crop not under 80 bushels.

Chesapeake Bay, and contains 275 acres. It was purchased by the father of the present proprietor, Mr. William Hambleton, about the year 1790, at 40s. Maryland currency—or \$5.33 per acre, and was occupied by a tenant, as it had been for two or three generations, until the year 1808, when the proprietor married and settled on it.

The soil is a stiff, yellow clay—growth chiefly pine; it was worn down to the lowest state of sterility; a considerable portion had been suffered to run into pine thickets, where the corn ridges are still visible; and it was nearly destitute of the buildings indispensable to a farmer. But the means of improvement were at hand: the proprietor knew their value and lost no time in availing himself of them. He had no *capital* of any kind, but he was young, skilful, and industrious. Having no slaves, he commenced with two hired hands, and, occasionally, two boys; two horses and a yoke of oxen. The arable land was 129 acres; but his operations for many years were confined to 99 acres—a poor field of 30 acres, distant from his resources, he left idle, unenclosed. He laid off these 99 acres as follows: two fields of 45 acres each—two lots, 5 and $1\frac{1}{2}$ —orchard and garden, $2\frac{1}{2}$ acres. For his first crop, to make a push, he selected his best land, including the old tobacco ground near the house. From 45 bushels of wheat, seeded September, 1807, he got a crop of 115, less than 3 for 1. In the spring of 1808, he planted corn on one-half of his other field, after getting out a considerable quantity of bank shells and sea-ware, and left the other half, under the same enclosure, for fallow, to be manured as opportunity might permit during the summer—and this place he continued to fallow for about eight years, and would have continued it longer but for the inconvenience arising from the want of pasture. It is to be regretted that he did not keep an exact record of all his crops: however, he assures me that the following may be depended on as very near the truth.—His first crop of corn was 85 barrels—his second 35, of which 20 were short corn.—(It may be well here to mention that a barrel of corn is 5 bushels of grain, or 10 bushels of ears.) His second crop of wheat was 250 bushels from 45 of seed, being $5\frac{1}{2}$ for 1. His third crop, 350, nearly 8 for 1. Fourth, 500—fifth, 700, and so on, increasing every year until the year 1816, having altered the arrangement of his fields from two of 45 to three of 30 acres each, he reaped from $67\frac{1}{2}$ of seed 1000 bushels of prime wheat—one-half on corn land, the other fallow. This crop he had the good fortune to sell at \$2.91 cents per bushel, and the good sense, although not pressed, to apply the proceeds to the payment of debts necessarily contracted in the erection of buildings, among others an excellent barn, and the purchase of three or four boys; and various expenses incident to a new establishment and growing family.—It should be remarked, also, that, until the end of the year 1818, his land was burdened with a third of the estimated rent, as dower.

No memorandum can be found for the crops of the three succeeding years, nor does he recollect the amount, but they were not so great as that just stated. He failed in one crop from defective seed which he purchased. In 1820, he reaped 1127 bushels from 90 of seed, 30 of which was sown on the out-field before mentioned. This, and several other crops, to be noticed, he has on record. In 1823, his wheat crop from 72 was 1039 bushels—nearly $14\frac{1}{2}$ for 1.

In 1830, from 88 of seed, he reaped 1497 bushels of wheat, 17 for 1; one-half from corn land, the other fallow, 30 acres each: the fallow yielded 25 for 1.—See some account of this crop in "The Farmer," about July, 1830.

Last year, being much occupied in repairing and building, he seeded

only 50 bushels of wheat, which produced a crop of 628 bushels—all this was on corn land, except a lot of 5 acres, which, from $7\frac{1}{2}$ of seed gave 157 bushels—nearly 21 for 1.

I have confined myself principally to an account of his wheat crops, because he could not inform me with so much accuracy the amount of his corn crops: they were generally good, seldom falling below three barrels to the thousand, and frequently reaching four. His greatest crop of corn was in 1827, from two of his 30 acre fields, 520 barrels.

Last year he bought 5000 bushels of oyster-shells, at the cost of \$100—burnt and spread them, as far as they went, at the rate of 200 bushels per acre, just before planting corn, on the out-field, which got also a dressing of farm-yard manure. The crop of corn just gathered is fair—few in the county better. His shell-banks giving out, and the drifts of sea-ware being less abundant than formerly, about eight years ago he commenced the use of marsh and heads of creeks, of which he thinks favourably, paying strict attention to the farm-yard and compost-heaps. He has one now containing upwards of 1000 skates, or double-heads, taken a few weeks ago in his seine—from this he calculates on a thousand cart-loads of manure for his corn land next spring. From their livers he extracted 73 gallons of oil. From experiments made last year with similar oil, he is of opinion that it is a remedy against the worm so destructive to the peach tree.

For fourteen or fifteen years past, he has made use of the sickle—much of his wheat being too rank for the cradle. *He ploughs about four inches deep, and cannot be induced to go deeper*—in good land sows a bushel and a half to the acre—in poor, one bushel; breaks his fallow ground about the middle of June—cross-ploughs soon after harvest—rolls and harrows, and, if likely to be grassy, gives it a third ploughing—puts in with the plough very shoal, in narrow ridges, keeping his manure near the surface.

It will be observed that this farm, notwithstanding its rapid improvement, has been *severely cropped*—present gain, from necessity, being the main object. The proprietor was not insensible of the value of clover as an improving crop, but he could not let it remain long enough to be of much use to the land. He never cut but one field of it, 1825, upwards of 50 tons from 30 acres. Hereafter, having got his out-field in pretty good order, he will adopt the four-field system, cutting one field of clover every year. His regular force is five able hands with some small boys. He runs *three ox and two horse carts*—has never kept an overseer, and for many years laboured daily. I have not thought it necessary to state his root crops, the produce of his hog-pen, &c., supposing that his principal crops would clearly show the progress of improvement.

The above was incorporated by the Committee in their report, as an authentic, reliable statement, so far as it goes, of Mr. Hambleton's management at Emerson's Point.

The best Soup.—When 1 lb. of lean beef, free of fat, and separated from the bones, in the finely-chopped state in which it is used for beef sausages or mince-meat, is uniformly mixed with its own weight of cold water, slowly heated to boiling, and the liquid, after boiling briskly for a minute or two, is strained through a towel from the coagulated albumen and the fibrine, now become hard and horny, we obtain an equal weight of the most aromatic soup, of such strength as cannot be obtained, even by boiling for hours, from a piece of flesh. When mixed with salt and the other usual additions by which soup is usually seasoned, and tinged somewhat darker by means of roasted onions or burnt sugar, it forms the very best soup which can in any way be prepared from 1 lb. of flesh.—*Liebig.*

ON THE EFFECT OF THE CHARACTER OF A NEIGHBOURHOOD ON THE SELLING PRICE OF LANDS.

IN the preceding chapter we have given, from a judicious Committee in Talbot county, Maryland, a sketch of the farm management of the proprietor of "*Emerson's Point*," to whom they awarded the first prize some two years ago. It shows the happy results to which economy and industry will as surely lead in Maryland and Virginia, as in Rhode Island and Massachusetts; but—*not so soon* as in these States, where that disposition to *combine* individual means is to be found, which everywhere accompanies dense population, and where the good sense of the people leads them to draw the loom and the anvil close around the plough.

In these thriving Yankee States, you will find in every neighbourhood, safe, economically-managed banks, or money shops, in which almost every man has more or less invested, to be loaned to diligent and frugal men, like the proprietor of *Emerson's Point*, enabling them to reach, in ten years, the result which it took him forty to achieve. And why should industry and judgment, and *land* combined, under any well organized social and political system, not command the use of capital, to give them activity, quite as soon as, or sooner than these same moral qualities combined with an *empty ship* or a *naked house*?—as these last do, and even personal enterprise alone, without other inducement or security, where men live together in large towns? Instead of being comparatively worthless, as are the great water-powers and coal and iron mines of Maryland and Virginia, in Rhode Island they would be worth millions on millions of dollars: although, to turn them to account, they should have to bring their coal from Pennsylvania, and their cotton from Louisiana?

The part of the report to which we have referred, was taken by the committee from a verified statement in "*The American Farmer*." On their own observation and account, they go on to remark further:—

"This last statement, so far as it goes, is its own best commentary, and the committee would not cast a shade over its interest by attempting either to enlarge upon or condense it; but as the best summary of good management is, the success which has resulted from it; they here note the act, that taking into view the whole of Mr. Hambleton's acquisitions and improvements, he has, besides supporting a large family in comfort, in the course of forty years, by diligent attention to farming alone, increased his property twenty fold. In other words, he has realized an average interest of fifty per cent. on his original capital.

"It is almost superfluous to add, that they found in the general condition of his farm evidences of good management, which characterize the neighbourhood in which he lives. And although it may be said, that the present value of his estate is in a measure owing to the fact that the prices of lands around him range rather high, it should be borne in mind that inasmuch as he was one of the first, if not the very first, to commence the system of thorough manuring, which has increased both their intrinsic and their market value, his merits are only placed the more above detraction. His claims to the first premium are such that the committee need not play around the point; they unhesitatingly award it to him."

On the preceding, but a few remarks remain to be made: and first of all, the reader will note this observation: "*Owing to the fact that the prices of lands around him range rather high.*" Now, does not this imply the highest compliment, when properly interpreted, that any man, or set of men, need to covet for their neighbourhood? Why "*range rather high*?" The committee did not mean that they were intrinsically better in proportion to price than other lands, but probably the contrary. What, then, is it that has raised *them* "*rather high*," if it be not the example and the benefit of association with skilful, industrious, sober, and benevolent neighbours?—and truly ought it not—does it not greatly add to, as the op-

posite state of things greatly detracts from, the intrinsic value of land in any particular vicinage? Where—to which of the two neighbourhoods would the man of capital and discretion go to buy for himself or his son—where lands “range rather high” on account of the good name of the neighbourhood, or where even better lands range rather low, on account of the residence, here and there, of drunkards, gamblers, thieves, and those who tolerate and even *speak to known* receivers of stolen goods? How often does it happen, that a whole neighbourhood is embittered by “a backbiting tongue,” or a ruffian, quarrelsome temper?—pestered with vain fools and ostentatious misers, who starve all at home for the sake of vulgar display abroad?—sometimes by “good-natured, sociable fellows,” who will neither work themselves nor let their neighbours work, and again by men who, knowing little, think they know every thing. In a word, let us add—but why add any thing?—“What have you to do,” says the cynical reader, “with the morality, any more than with the politics of agriculture?” Why, just because in dwelling on each, in its proper place, we hope to promote the practical success—to augment the happiness—and to elevate the character of those whose interests we shall espouse as long as life lasts. In a word, then, (forgetting fat hogs and fat calves for the moment,) let us add that gentlemen in the country are perhaps sometimes apt to forget how much even the selling value of their own lands may have been affected by their own character and that of their immediate neighbours, for intelligence, uprightness, and amiability, or the reverse of these qualities. We once knew a man not over-burdened, as indeed bullies rarely are, with true courage, who was never so happy as when in hot water with some of his neighbours. With a sort of instinctive love and hope of a quarrel with somebody, it mattered not whom, about something, it mattered not what, Mr. Captious would at any time leave home in the midst of a late stripping or planting season, or harvest, to go to a fish-fry or a public auction, or a neighbourhood barbecue, where true gentlemen go for social conversation, and to seek their own pleasure by contributing to the enjoyment of others. While of their neighbours such men speak only to say something good or are silent, the chief delight of Mr. Captious is to paint the best and most eminent men in the vilest colours. Now, as our religion, the little we have, leads us to cultivate peace, and to think the longest life too short for the exchange of the good offices we owe to each other, and badly as we long for a cottage and two hundred acres, on which to hatch our own chickens and trim our own vines, and so end our days, we would not accept even that *magnum bonum*, if located in the neighbourhood of Mr. Captious.

In the neighbourhood of Emerson's Point, two sales have been made lately of farms of several hundred acres, as high as fifty and sixty dollars per acre. True, besides having at command plenty of “*pine shatters*,” they are on navigable waters, that abound in *skates* and sea-crabs; and oyster-shells and sea-ware, and then you have but to cast your line in the right place at the right time, if—you can find them, and pull up a fine sheep's head or white perch; but—*au contraire*, is there no third-day chills and fevers?—no bile?—no jaundice?—no mosquitoes?—no galinippers?—no sand-flies? We only ask for information, and whether or not—Oh! that we had a “cabin” on that or some other “bay side” like it, with what alacrity would we go to take the chances of fish and fever, for the residue of this life of certain labour and uncertain reward! But pray we would to kind Providence to save us from becoming the terminus of steamboat “excursions,” and the advent of Mr. Captious. Alas! how easy to build castles—how more easily they melt away, leaving nothing but “the baseless fabric of a vision!”

FORM.

Previously to giving directions for the purchase of a full-grown hunter, we shall proceed to exhibit him in his highest form, although we are aware of the difficulty, on certain subjects, of conveying, clearly, an idea from our own mind to that of another. We shall, however, endeavour to make ourselves understood by describing each individual point. As to the form and shape of a hunter's head, as we do not ride upon it, it is not of much consequence, provided it be well hung on, and that is of the very highest importance, not only, as we have shown in the race-horse, on account of his respiration or wind, but unless it be so, he cannot be pleasant to ride. Not only must his jaws be wide, but when we consider that the head of a horse hangs in a slanting position from the extremity of the neck, and that the neck itself projects a considerable distance from the chest, on the muscular strength and proper formation of the neck must depend whether a horse be light or heavy in hand, and consequently pleasant or unpleasant to ride. A weak or loose neck may not be so material, as we have before observed, to the race-horse; he is generally ridden in a martingale, and in that case always; add to which, his race is soon run. Nevertheless, we like to see the neck of the race-horse rise out of the shoulder with a tapering curve, in which case he is pleasant to ride in his gallop, and, if a hard puller, his jockey has much more power over him than if his neck be loose and low. But, in a hunter, the proper position of his head is a *point of the greatest moment*, as without it his rider cannot handle him properly at his fences; and if he be not a regular star-gazer, he is always more or less dangerous to ride over a country. The proper junction of the head with the neck, and the carrying of it well or ill, depend chiefly on two particular muscles contained in the neck. The most important of these is called the splenius muscle, which constitutes the principal bulk of the neck above, and its action is sufficiently evident, namely, very powerfully to elevate the head and neck. The principal beauty of the neck, indeed, as well as the carriage of the head, depends on this muscle; and its ample development is a point the sportsman should attend to in the choice of horses that are to carry him with hounds. A certain degree of muscularity of the neck is absolutely necessary in a hunter, and it is greatly promoted by good keep in colthood; also by delaying the period of castration till the second year, which should invariably be done when the want of this muscularity is apparent in the first. It must, however, be observed, that there is a medium in this muscularity of the neck, although excess is the better extreme of the two; for when the neck of a horse appears, like that of a sheep, to rise out of the chest, and so far from being arched above, and straight below, is hollowed above, and projects below, such a horse is nearly worthless for any pleasurable purpose, as his head cannot, by any means whatever, be got into a proper place.

It has been said that a horse with a long neck will bear heavy on the hand. We do not believe that either the length of the neck, or even the bulk of the head, has any influence in causing this. They are both counterbalanced by the power of the ligament of the neck. The *setting on* of the head is most of all connected with heavy bearing on the hand; and a short-necked horse will bear heavily, because, from the thickness of the lower part of the neck consequent on its shortness, the head cannot be rightly placed. The head and neck, however, should be proportioned to each other. A short head on a long neck, or a long head on a short neck, would equally offend the eye.

Although length of neck in a hunter is not desirable, length of shoulder

is indispensable. Horses have raced well with short upright shoulders ; but it is impossible that one so formed, however good he may be in his nature, or even in his general action, can be a safe hunter, and for this reason : a hunter is constantly subject, by down-hill leaps, leaping into soft ground, and getting his fore-legs into grips, or unsound ground, to have the centre of gravity thrown forward beyond the base of his legs ; and it is more or less recoverable according to the length or shortness of his shoulder. By length of shoulder is meant obliquity of the scapula, or shoulder-bone, by which the point of the shoulder is projected forward, and which, added to the obliquity of the scapula, enables the rider to sit considerably behind, instead of nearly over the fore-legs, or pillars of support, which, on a short and upright-shouldered horse, he must do. One remark, however, must be made respecting the oblique shoulder. It is sometimes not sufficiently supplied with muscle, with which the upright shoulder generally abounds. We therefore recommend purchasers of young horses for hunters, to give the preference to what may *appear* coarse shoulders, nay, even inclined to be somewhat round, or flat on the withers, provided they are accompanied by the necessary and absolutely essential obliquity of the shoulder-bones.

The setting on of the arm, which should be strong, muscular, and long, is of much importance to a hunter. By the length of this part in the hare, as we have already observed, added to the obliquity of her shoulder, she can extend her foreparts farther than any animal of her size : in fact, she strikes nearly as far as the greyhound that pursues her, by the help of this lever. The proper position of the arm of the horse, however, is the result of an oblique shoulder. When issuing out of an upright shoulder, the elbow-joint, the centre of motion here, will be inclined inward ; the horse will be what is termed " pinned in his elbows," which causes his legs to fall powerless behind his body ; and he is seldom able to go well in deep ground. There are exceptions, but they are rare. A full and swelling fore-arm is one of the most valuable points in a horse, for whatsoever purposes he may be required ; and although we have occasionally seen hunters with light thighs carry weight well, we never have seen it so carried by horses deficient in their arms.

If sportsmen were to see the knee of the horse dissected, they would pay more attention to the form and substance of it than they generally do. It is a very complicated joint, but so beautifully constructed that it is seldom subject to internal injury. Its width and breadth, however, when considerable, are great recommendations to hunters, as admitting space for the attachment of muscles, and for the accumulation of ligamentous expansions and bands, greatly conducive to strength. Below the knee is a point on which we will not say much here, as we have already alluded to it in our remarks on the race-horse. We mean the shank, or cannon bone, and its appendages. It can scarcely be too short in a horse that has to carry a heavy man ; round legs are almost sure to fail ; those of the hunter should be flat, with the back sinews strong, detached, and well braced. This constitutes what sportsmen call a " wiry leg."

The fetlock is also a complicated joint, and very liable to injury. In a hunter it should be large and strong. But as regards his action, the pastern is still more material, and also to his standing sound. Very few horses with short pasterns can go well in deep ground, and for this obvious reason—the action of the joint is destroyed by getting below the surface of the ground, and is of course sooner immersed than when it is longer. But a greater evil than this attends a short pastern. It is the predisposing cause of navicular lameness, particularly in horses carrying weight, owing to the foot being deprived of that elasticity which a longer pastern affords, and which

consequently relieves the concussion on the foot coming to the ground in galloping and leaping, as well as on the hard road. Horses with short, and, consequently, upright pasterns, cannot be pleasant to ride, and they seldom stand many seasons' work. Excess in either should be avoided, but of the two, a hunter is less objectionable from the extreme of length, than of shortness, in this most material part.

That the foot of the hunter should be wide, is also obvious to the meanest capacity, independent of its being the form most conducive to health. The nature of the ground he has to travel over requires at times the widest base he can present to it, as a foundation for his great bulk, and thus the farmer carries out his manure upon tender land, in a broad and not a narrow-wheeled cart. Xenophon relates, that certain people of Asia were accustomed, when snow lay deep on the ground, to draw socks over the feet of their horses, to prevent them sinking in it up to their bellies; and we know why an ox sinks less in soft ground than a horse does. It is because his foot enters it expanded, by means of the division of the hoof, and when he draws it out it is contracted. The foot of the hunter, however, should not be too wide, or it may operate against his speed.

The position of the fore-legs of the hunter admits of more latitude than that of his hinder ones, or indeed of any other part of his frame. We have seen brilliant hunters standing in all positions and postures as regards their fore-legs. Some very much over the knees—that is, with the knees bent and projecting outward; many upon very twisted fetlocks, turning the toes out; and a few, though only a few, turning the toes in. In the human frame, a certain squareness in the position of the feet is consistent with strength, as we see in the statues of Hercules; but the lightness of a Mercury is indicated by the direction of the toe outwards. This is, to a certain extent, the case with the horse. Although, if measured by the standard of perfection, his toe is required to be in a direct line with the point of his shoulder, yet we have seen and heard of some of the speediest and best racers and hunters, the position of whose fore-feet have deviated considerably from this supposed essential line; but the inclination of the toe outwards is so common in horses used for these purposes, that it can scarcely be called a fault. Indeed, some persons argue, that a leg so placed affords a broader base to the superincumbent weight than when quite in a line with the shoulder—that is, provided the twist arises from the fetlock, and not from the setting on of the arm at the shoulder. Be this as it may, we are well assured that, provided the hinder-legs and quarters are good, a hunter will admit of a considerable deviation from the true line in the fore-legs, and carry his rider brilliantly. It is well known, that a much more twisted fore-legged horse could not well be seen, than the celebrated Clipper, the property of the equally celebrated Mr. Lindow, for many years said to be the most brilliant hunter in Leicestershire.

But there is one portion of the fore-quarters of the hunter to which a rule must be applied that will not admit of an exception. He must be deep in his chest or brisket—that is, from the top of the withers to the elbow. Numerous are the narrow but deep horses, in their "girth," as the term is, that have carried heavy weights, in the first style, with hounds; but no matter how wide a horse may be, if he have not depth, he cannot carry weight, and is very seldom a good-winded horse, even under a light man. One of the greatest compliments, then, that can be paid to a hunter, at first sight, is, that he appears two inches lower than he really is. Such, however, is the case with horses whose growth has been forced in their bodies by good keep when young, and thus they come under the denomination of "short-legged horses," so much esteemed by hard riders. They are like-

wise, for the most part, better leapers than such as have less growth in the body, and stand upon longer legs.

We have before observed, when speaking of the race-horse, that large bone is not required in his cannon or shank, (the part from knee to fetlock,) neither is it in the hunter. The real power of all animals is in the muscles, sinews, and tendons; and the leg best calculated to carry weight and endure to a good old age, is that in which the bone is small, but of a dense and perfect texture, and in which three convexities can be very plainly distinguished—namely, the bone; the elastic ligament behind the bone, called the sinew; and, behind that, *the flexor tendons, large, round, and strong.* The rare combination of strength with lightness is here beautifully displayed, and is one of the many instances which might be produced, to show how Nature delights to work with the least possible expense of materials.

The hunter should have length in his shoulders and quarters, and, to a certain extent, also in his back. It is true that horses with short backs carry weight best up a steep hill, which, as that is the worst method in which this animal can employ his strength, (in man it is the best,) shows that heavy men should ride short-backed horses. For hunters, however, that are ridden in our best hunting countries, which, previously to being laid down in grass, were thrown up by the plough into high ridges with deep furrows, must have *moderate* length of back, or they cannot go smoothly over such ground. Good loins, with width of haunch, (the *vis a tergo* being so necessary in leaping, as well as galloping on soft ground,) need scarcely be insisted upon; and we now proceed to the hinder-legs, the proper or improper form of which makes the difference between a good or bad hunter, if a horse with badly formed hinder-legs can be called a hunter at all. But a horse with short, straight, and weak thighs, cannot make a *good* hunter. Even admitting that they are not weak, but short and straight, yet the objection remains, because he cannot, in the latter case, be pulled together in his gallop, nor have his stride collected to enable him to take his fences properly; and, what is not generally known, he is almost certain to be a hard puller. Indeed, some good judges go so far as to assert, that horses with straight hinder-legs never have good mouths, and there is much truth in the remark, as their form will not admit of their being “pulled together,” as the horseman’s term is, in their quick paces, and without it no horse is safe. A long and muscular thigh, then, with a clean well-placed hock, is one of the most material points in a hunter, and also one by which the duration of his services may very nearly be measured; as when much out of the true form, either inclining inwards, like the cow, or outwards, like the bandy-legged man, disease is almost certain to attack this very complicated but beautifully contrived joint, when put to severe exertion, especially in soft ground. The shank-bone of the hinder-leg, below the hock, ought to be equally well supported by sinews and tendons with that of the fore-leg; and the pastern of the hind-leg should resemble that of the fore-leg, moderately long, strong, and oblique.

But such is the paramount importance of the hock in the hunter, that we transcribe the following admirable description of one most material point in it:—“The most powerful of the flexor or bending muscles are inserted into the point of the hock, or the extremity of the os calcis; and in proportion to the projection of the hock, or, in other words, the length of this bone, will two purposes be effected. The line of direction will be more advantageous, for it will be nearer to a perpendicular; and the arm of the lever to which the power is applied will be lengthened, and mechanical advantage will be gained to an almost incredible extent. Suppose this bone of the hock to be three inches in length, the joint formed by the tibia and the astragalus is

evidently the centre of motion, and the weight concentrated about the middle of the shank is the obstacle to be overcome. If the weight be four times as far from the centre of motion as the power, a force equal to four times the weight would raise it. It is, however, here to be remembered, that it is not merely the weight of the leg which is to be raised, but the weight of the horse, for the time resting upon the leg, and that weight to be propelled or driven forward. At what shall we calculate this? We may fairly suppose that the muscles, whose tendons are inserted into the point of the hock, exert an energy equal to 4000 pounds. Let us further suppose, that an inch is added to the point of the hock, which will be an addition of one-third to its length: a muscular power of less than 3000 pounds will now effect the same purpose. The slightest lengthening, therefore, of the point of the hock will make an exceedingly great difference in the muscular energy by which the joint is moved, and a difference that will wonderfully tell in a long day's work. On this account, the depth of the hock, or the length of the bone of which we are speaking, is a point of the greatest importance. There is, however, a limit to this. In proportion to the length of this bone, must be the space which it passes over, in order sufficiently to bend the limb; and in that proportion must be the contraction of the muscle, and consequently the length of the muscle, that it may be enabled thus to contract; and, therefore, if this bone were inordinately lengthened, there would require a depth of quarter which would amount to deformity. A hock of this advantageous length is, however, rarely or never met with, and it is received among the golden rules in judging of the horse, that this bone of the hock cannot be too long.*

Hunters which carry very heavy men cannot excel in the field, unless they exhibit those just proportions in their limbs, and all the moving levers, necessary to produce full liberty of action, but not too long a stride. Well placed hinder-legs, with wide hips, well spread gaskins, and great depth of chest, are essentials, together with as much of the *vis a tergo* as is consistent with a not unsightly back, commonly called "a hog back." Well knit joints, short cannon bone, moderately oblique pasterns, with rather large feet, are not only points from which great physical powers may be expected, but they are necessary to the duration of them in the horse we are now alluding to. As, however, it is an axiom in the animal creation, that the parts which add to strength diminish swiftness, hunters to carry more than sixteen stones† well with hounds, at the pace they now run, are always difficult to be procured, and ought to command large prices. The stamp of animal most approved of for this purpose, is the short-legged, thick, but well-bred horse, not exceeding sixteen hands in height, but appearing, to the eye, half a hand below that standard. As for his general appearance, it is "handsome is, that handsome does," in this case; and we must not look for beauty in all his points.

Having now described each individual external part of the horse essential to his being a good hunter, we shall, in a few words, exhibit him to the reader's view in what we consider his best form. He should have a light head, well put on, with a firm, but not a long neck; lengthy, and consequently oblique, shoulders, with very capacious chest, and great depth of girth; a long, muscular fore-arm, coming well out at the shoulder, the elbow parallel with the body, neither inclining inward nor outward; a short cannon or shank, with large tendons and sinews, forming a flat, not round leg;

* *Library of Useful Knowledge, Farmers' Series, "The Horse,"* p. 272.

† 224 pounds: 14 pounds to the stone.

an oblique pastern, rather long than short, and an open circular foot; the back of moderate length, with well-developed loins and fillets, and deep ribs, making what is termed by sportsmen a good "spur-place." From the loins to the setting on of the tail, the line should be carried on almost straight, or rounded only in a very slight degree. Thus the haunch will be most oblique, and will produce a corresponding obliquity in the thigh bone, which formation is peculiarly characteristic of the well-bred horse. The dock of the tail should be large, the buttocks close together, and the fundament small, and somewhat resembling the front or eye of a pippin apple. The thighs should be muscular and long, rather inclining inwards, with large, lean hocks, the points appearing to stand somewhat behind the body, which will bring the lower part of the hind-leg, or shank, under it. The shank, fetlock, and pastern of the hinder-leg, should exactly resemble those of the fore-leg, as also should the foot. The legs should appear short, from the great depth of chest, and well-proportioned substance of the body, or middle-piece.

SIZE.

The stature of the horse is no more absolutely fixed than that of the human body, but a medium height is considered as best for a hunter, say fifteen hands, two or three inches. For one good horse over this height, there are a hundred under it. In fact, there are, in the operations of nature as well as of art, limits which they cannot surpass in magnitude, and it is known that no very large animal has strength in proportion to its size. That the horse has not, the pony affords proof, if any other were wanting. Even the heaviest weights find horses about the height we have fixed upon best calculated to carry them. There have been many extraordinary instances of horses, little more than fourteen hands high, being equal to the speed of hounds over the strongest counties in England. For example, Mr. William Coke's "Pony," as he was called, many years celebrated in Leicestershire; but they are not pleasant to ride, by reason of the fences, when high, appearing higher to the rider than when he is mounted on a taller horse.

MOUTH.

Temper and mouth are essential points in a hunter. The former adds much to his value, not only as it contributes to the pleasure and safety of his rider, but a horse of a placid temper saves himself much in a long day's work with hounds, and especially when there is much leaping. Indeed, fretful horses are proverbially soft, and not generally to be depended upon at a pinch, which caused Shakspeare to make them the symbol of false friends. Thus Julius Cæsar exclaims:

"Hollow men, like horses, hot at hand,
Make gallant show, and *promise* of their mettle;
But when they should endure the bloody spur,
They fall their crest, and, like deceitful jades,
Sink in the trial."

A hunter should have courage, but nothing more, to make him what he is required to be, namely, not afraid to leap at any fence his rider thinks proper to put him at. His mouth will depend upon two things: first, upon the judgment of the person who breaks him in, in his colthood; and, secondly, upon the position of his hinder-legs; but chiefly upon the first. It ought to be endowed with so great sensibility, that the slightest motion of the bit should give him warning, and direct his course, which is signifi-

cantly implied by Horace, when he said, "the ear of a horse lies in his bridle." It is true, that what we call the "mouth" of a horse, is an artificial feature, at all events, a figurative term for his being easily acted upon by the bridle; but it is a point of the utmost importance in a hunter. Without it, in short, he is absolutely dangerous to ride; for although the skill and power of his rider may prevent his running away, yet he is always in danger of being placed in some unpleasant situation or other by him. In the first place, he cannot be a large fencer, nor safe at all sorts of leaps, if he will not suffer his rider to pull him together, to collect him for the effort of rising at them. Secondly, he is as dangerous in going through gates, only partly opened. Thirdly, if the horse immediately before him should fall at a leap, he is very apt to leap upon him or his rider; and lastly, his strength is sooner exhausted than that of a horse, perhaps not naturally so good, which is going quietly, and within himself, by his side.

No doubt many of the ancient writers were good judges of horses, although they were deficient, compared with the moderns, in availing themselves of their highest capabilities. Were a purchaser of a hunter to look no further than the first chapter of Xenophon *περὶ ἵππων*, he would find hints that would be well worthy his attention; and nothing can be more expressive of the evils attending a bad mouth in a horse of this description, than the following sentence from Pliny: "Equi sine frænis deformis ipse cursus, rigida cervice, et extento capite, currentium," which may be thus translated: The career of a horse without a bridle is disagreeable, carrying his neck stiff, and his nose in the air. When we consider how often it is necessary to pull up, or to turn a horse very short in crossing enclosed countries, the value, even on the score of comfort, of a good mouth, cannot be too highly appreciated by the sportsman.

ACTION.

We now come to the action of the hunter, which, after all, is the main consideration. He should have energy in all his paces, but he may have too much of what is generally called action. Nothing conveys to us a better idea of that which is adapted to his business, than the concluding sentence of a huntsman of former days, when describing to his master a capital run with his hounds. "The old mare," said he, "*carried me like oil.*" The action of the hunter should be *smooth*, or it will not last. His stride in his gallop should be rather long than otherwise, provided he brings his hinder-legs well under his body; and the movement of the fore-legs should be round, but by no means high. Above all things, there should be no "*dwelling*," as it is called, in the limb coming to the ground; a great obstacle to speed, but often the accompaniment of excessive action in the fore-legs. But the test of action in the hunter, is in what sportsmen call "*dirt*," that is, in soft, tender ground, or when passing over such as appears dry on the surface, but is not sufficiently so to bear his weight. It is not exactly in the power of the best judges to determine whence this peculiar excellence, which some horses possess over others apparently well-proportioned, arises, for which reason the eye should never be depended upon in the selection of horses for the field. Wisdom here can only be the produce of experience; and many sportsmen have paid dear for it on this particular point. In fact, next to ascending steep hills under great weight, nothing puts the physical powers of a horse to so severe a test, as carrying a heavy man, at a quick rate, over a country that sinks under him at every step. Mere strength alone will not do it. It must be the result of a combination of strength with agility, good wind and speed, to produce which, the most

perfect arrangement of the acting parts—although the exact symmetry and proportion of them may not be exactly discernible to the eye—are requisite, and, we may be assured, are present. As the beauty of all forms is, in great part, subordinate to their utility, a horse of this description, that is, one which can carry sixteen stones well up to hounds in any or in all countries, at the rate they now run, not only, as has before been observed, commands a very high price, but, to a person who lives to study nature, presents a feast to the eye.

A hunter should be what is called very quick as well as very fast; by which is implied, that he should not only have great speed, but that he should be very quick in regaining his speed after taking his leap, or being pulled up from any other cause. One so gifted will cross a country, especially a close one, in less time than one that is more speedy, but not so "quick on his legs," as jockies term it. It is also very agreeable that a hunter should be safe in his slow paces on the road; and, if a fast trotter, he relieves himself by changing the action of the muscles, when the pace of hounds so far abates as to allow him to break into a trot.

LEAPING.

One of the greatest accomplishments in a hunter is being a perfect and safe leaper. The situation of a sportsman riding a horse that is "uncertain," as the term is, at his fences, may be compared with that of the philosopher, which Cicero describes in his *Tusculan Questions*, as seated on the throne of Dionysius, gazing upon the wealth and splendour that surrounded him, with a naked sword suspended over his head by a single thread. But a horse following hounds often leaps under very great disadvantages, which accounts for the numerous falls sportsmen get. Putting aside the labour of rising from the ground, which, to the horse, with a weight on his back, must be great, from the earth's attraction and the body's gravity, he has often to take his spring without any fixed point for support; whereas, in most other cases, leaping takes place on a fixed surface, which possesses the power of resistance in consequence of its firmness. Nevertheless, although the surface yield to a certain degree, leaping can still be performed, notwithstanding the retrograde motion of the surface produces a great diminution in the velocity of the leap, compared with that which is made from firm ground; and the velocity is always greater in proportion as the resistance is perfect. Thus it is, that we find horses able to cover much greater obstacles in Leicestershire, and the other grass countries, where the taking off for the leap is generally good and sound, than they can cover in ploughed and marshy districts, where they have not that advantage, from the less firm state of the soil. We shall now endeavour to point out the form most likely to constitute a good leaper.

The very worm that crawls on the ground first carries its contraction from the hinder parts, in order to throw its fore parts forward; and it is chiefly from the *vis a tergo*, or strength of back, and hinder quarters, that the power of leaping in a horse is derived. It must, however, be admitted that oblique shoulders give him a great advantage, by enabling him to extend his fore quarters; but if his loins be loose and weak, and his hinder-legs ill-placed, with weak hocks, he cannot make, in any one's hands, a safe and perfect leaper. But the position of his head has something to do with it. A plank placed in equilibrio cannot rise at one end unless it sinks at the other; and although a horse in light harness cannot, for appearance' sake, carry his head too high, provided he be obedient to the rein, the hunter should carry his low. A colt, running wild, never raises his head when he leaps, but

lowers it, and so should the hunter; and he is always less liable to fall in galloping over a country when he carries his head low; likewise, in horses with lengthy shoulders, the seat of the rider is rather benefited than injured by it.

The sort of fence that stops hunters more than any other description of obstacle, is a wide brook; and like all other wide places, it takes a good deal out of him, if he clears it. Lengthy horses are the best brook jumpers; but they require good loins and hinder quarters as well, and, above all things, *courage*. Unless a horse takes a wide brook in his stroke, he is almost sure to be in it; for which reason he is generally ridden fast at it, and, for the most part, not allowed to see it till he comes close to it. Immense space has been covered by horses when jumping brooks, particularly when there has been a difference of elevation of the banks in favour of the horse. We have heard of thirty feet and upwards from hind foot to hind foot; but half that space *in water* is considered a good brook, and even if the banks are sound, stops a great part of the field. When unsound, it requires a horse, coming under the denomination of a "good brook-jumper," to clear it without a fall, and particularly if towards the end of a run.

To be a good timber leaper is a great desideratum in a hunter, although many horses are great timber leapers, and yet from their form, never make good hunters. It only requires a short-backed, truss-horse for this purpose; and he can dispense with the general length so necessary to the complete hunter. Good and well-formed thighs, however, are necessary. For those hunting countries, such as Cheshire, where the hedge is generally placed on a bank or "cop," as it is there styled, rather a short but very active horse performs best. But he must be very good in his hinder-legs, and very quick in the use of them. Wall jumpers come within the same class with timber jumpers as to make and shape.

There is one faculty in which the horse is wanting, that would, if he possessed it, give him a great advantage in leaping. In the human species, the power and influence of feeling are inherent, in a great degree, to the very tips of the fingers; but the horse has no proper organ of feeling or *touch*. When a man takes his spring for a leap, or leaps on the top of any substance, he has a distinct and certain sense or knowledge of the nature of the ground from which he has sprung, and of the substance on which he has alighted; but, from the insensible nature of the horse's hoof, such feeling is, in a great measure, denied to him, and indispensably so too. Still, however, there are a few instances upon record of horses going very well over a country even after having undergone the operation of neurotomy, by which all sensibility, from the fetlock downwards, has been destroyed.*

* An operation introduced by Moorecroft. It consists in the excision of a portion of the nerves going to the inner and outer metacarpals. See Skinner's edition of "Youatt on the Horse."—*Ed. P. L. & A.*

Longest Races ever run in the United States.—The two longest races ever run in the United States, were won by a Medley and a descendant of Clockfast. One race was forty-four miles, heats twenty-two miles each; and the other thirty-two miles—one heat seventeen, and the next fifteen miles. In both cases they were ridden by gentlemen. D.

ON THE COST OF PRODUCING WHEAT AND INDIAN CORN IN THE STATE OF NEW YORK.

[From the Patent Office Report of 1847.]

Binghamton, N. Y., October 16, 1837.

HON. D. S. DICKENSON—*Dear Sir*:—I will give you the result of my experience and observation respecting the cost of producing crops of wheat and Indian corn, in this vicinity.

I estimate the value of our wheat lands, in a good state for a crop, at twenty dollars per acre.

Interest on this at 6 per cent.	\$1-20
Three ploughings	4-50
Harrowing thoroughly	2-25
One and a half bushels of seed, and sowing	1-68
Harvesting with a cradle	1-00
Threshing and cleaning	2-00
	<hr/>
	\$12-63

I estimate the average yield on good land, well tilled, at twenty bushels per acre, making the cost sixty-three cents and a fraction per bushel.

I have made no account of the value of the straw, or of gathering the crop into the barn, or of tending it while growing, because in stating the value of the land I suppose it to be well fenced, and that the crop will cost nothing in tending, and the straw for cattle fodder and for making manure, is worth more than barn room, cartage from the field, &c.

The average crop, agreeably to my statement, may be greater than the yield of many fields, half tilled, and sown at an unseasonable time, but I am confident that I have not *overrated* the production, on an average, of good farms in this county, which receive the culture which I have contemplated in my estimate of expense.

Our corn land I would call worth twenty-five dollars per acre.

Interest on which is	\$1-60
Once ploughing with double team	2-00
Harrowing	1-50
Seed and planting	1-00
Plaster and putting on the hill	37
Ploughing and hoeing twice	2-00
Cutting by the roots and stacking	75
Husking and threshing	2-50
	<hr/>
	\$11-62

Average yield, forty bushels. Cost of production, twenty-nine cents:*

In this amount I have put down nothing for manuring or hauling, because the fodder obtained from this crop, being cut up when the kernel begins to harden, in the way now universally adopted here, and carefully saved, is *worth as much as a moderate crop of hay made from the same quantity of land; and produces as much manure as is needed for future crops.*†

Perhaps I ought to explain the fact that it costs less to prepare ground for corn than for wheat. The most approved mode of raising a corn crop is, to plant on sward ground, ploughing it but once and turning the upper side perfectly under—then harrowing lengthwise until a good tilth is pro-

* Double as much as it is worth in many parts of the Western country.

† And yet in our census there has never been any account taken of corn fodder!

duced. When the soil is not rich enough, stable manure is first spread on the land.

I would also explain my putting the value of corn land higher than wheat land, by remarking that our river bottom, and the adjacent grounds, are the best for corn, and are more valued, though back and more elevated land produce more and better wheat, being less liable to rust and shrinking.

Very respectfully, your friend,

A. DOUBLEDAY.

INTERESTING AGRICULTURAL EXPERIMENTS.

SOME recent experiments in wheat and flour go to prove that both contain water, and that the quantity is more in cold countries than in warm. In Alsace, from 16 to 20 per cent. In England, from 14 to 17 per cent. In the United States, from 12 to 14 per cent. In Africa and Sicily, from 9 to 11 per cent. This accounts for the fact that the same weight of Southern flour yields more bread than the Northern. English wheat yields 13 pounds more to the quarter than the Scotch. Alabama flour, it is said, yields 20 per cent. more than Cincinnati. And in general, American flour, according to the authority of one of the most extensive London bakers, absorbs 8 or 10 per cent. more of its own weight of water in being made into bread than the English. The warmer the country the more is the water dried out of the grain before it ripens, and hence when made into bread, it absorbs more water again, and is therefore more valuable. Professor Beck has written a report for the Patent Office, in which he shows that the presence of water unfits these articles for preservation. The books of a single inspector in New York city showed that in 1847 he inspected 218,679 barrels sour and musty flour. In his opinion the loss on these was \$250,000. Every year the total loss in the United States from moisture in wheat and flour is estimated at from \$3,000,000 to \$5,000,000! To remedy this great evil, the grain should be well ripened before harvesting, and well dried before being stored in a good dry granary. Kiln drying is preferable. The mode of ascertaining the amount of water is this.—Take a small sample, say five ounces, and weigh it carefully. Put it in a dry vessel, which should be heated by boiling water. After six or seven hours weigh it carefully, until it loses no more weight. Its loss of weight shows the original amount of water.

Sweet Potato Seed from the Bloom.—The undersigned has raised for three years past, sweet potatoes, of better quality than usual, in the following way, viz.:

The yam potato vine blooms in August; in about a month thereafter they form a pod; the seed are then formed of about the size of sage seed, and of the same colour. The pod should be noticed and gathered when ripe, or else they will soon drop. In the spring, at the usual time of sowing seed, I sow them in the same way I sow cabbage seed. They will not come up quite as soon, but will continue doing so through the spring. The plant is small and delicate in appearance, and should be drawn in a wet season, with a little dirt attached to it, and transplanted. The leaf and vine have a different appearance from the potato usually, and the potato will be found to grow larger and smoother than usual.

I prefer this method, after satisfactory practice, to raise the potato, to any other whatever.

COLLIN WOOD.

A MODEL PLANTATION.

[From the Charleston Mercury.]

WITH NOTES, BY THE EDITOR OF "THE PLOUGH, THE LOOM, AND THE ANVIL."

A WRITER in the Charleston Mercury, having just visited Millwood, the plantation of Col. Hampton, near Columbia, S. C., in describing it, says :—

Col. Hampton has for many years past been much interested in improving the breed of horned cattle in our country; and has from time to time, at a great pecuniary expense, introduced from abroad the various improved breeds. These he has liberally distributed through the country; and in my occasional travels, whenever I have seen an extraordinary milch cow, I was not long in ascertaining the origin. The expense of feeding a fine cow, yielding twenty or more quarts of milk, is not greater than that of our low country cows, giving, after they are tamed, five or six quarts.*

I observed in Hampton's herd, a bull of four years old, that possessed all the points of a perfect animal of the kind. I doubt whether he can be surpassed in America.† I also examined one of two twin cows, which I was informed unitedly gave sixty-one quarts of milk per day.‡

Good milch cows cannot be profitable without a convenient dairy, to which an industrious and cleanly dairy maid is essential. The improvements I observed in this department were highly commendable. The milk-pans, instead of being of wood or stoneware, were *all of glass*,§ which impart no taste to the milk or butter. The pans were protected from the flies with frames covered by gauze; the dairy maid was a pattern of cleanliness and neatness; the house was cool, airy, and in neatness rivalling a Holland parlour. Such a sight would give an additional relish to the milk and butter.

The flock of sheep, which I judge from observation to be between five and six hundred, was almost wholly composed of the Bakewell breed. These sheep were in fine order, with a good carcase, and a rich fleece, intermediate in texture between the long-woolled and the Merino sheep; the average weight of wool in the whole flock will, I think, be between five and

* Neither will give much milk without being well fed, any more than you can get meal from a hopper, but by putting in grain; though out of a given quantity of food, some will grind more milk—some more fat. It is a fact well attested, lately, in France, that a man, in five years, has very *nearly doubled* the produce of his cheese dairy from twenty-five cows, by close attention, in the selection of them, to the *marks laid down by Guenon*. He has no doubt of quite doubling it in another year. We shall give the particulars.—*Ed. P. L. & A.*

† Doubtless this is the bull Mr. Summer bought for him of Mr. Vail, of Troy, some years since—a *red* short-horn, in pursuance of Col. Hampton's partiality for that colour.—*Ed. P. L. & A.*

‡ We once knew a cow, scarcely of middle size, thin skin, fine hair, and blood-looking, but called a "country cow," from Adams county, Pennsylvania, bought out of a drove, by Mr. Gregg, of Baltimore, which gave thirty-two quarts in a day.—*Ed. P. L. & A.*

§ This is like Hampton—not to *talk* about the matter, but to *do it*!—Years ago we called attention to this obvious improvement in the milk-pan, and begged the American Institute to import them. In Belgium they were used in the large dairies. The dairy maid there attends to eighteen cows, and makes money on an allowance of a dollar a year extra for *pan money*, paying for what she breaks. We have had a specimen of Boston-made glass milk-pans sent to our office, and, if we could remember the name of the manufacturer, would give it.—These are railroad and steamboat notes we are now making. Quere—for we forget—is Col. Hampton's a spring-house or a cellar? In Pennsylvania, the best of butter-makers—or rather makers of the best butter—owing probably to the grass, are discarding spring-houses for cool, well-ventilated cellars.—*Ed. P. L. & A.*

six pounds per head. There are, however, some individuals producing some extraordinary fine and heavy fleeces. I was present at the weighing of the fleece of a ewe seventeen months old, presented by Col. H. to Dr. Parker, of Columbia, and kept in the vicinity of the asylum, which weighed sixteen pounds. The fleece, although not washed, was tolerably clean. Deducting one-fifth for waste, which is the usual allowance with the Saxon fleece wool, we would have nearly thirteen pounds of pure wool, which I am not aware has ever been equalled in any country in this variety of sheep. The average fleece of England, as far as my memory serves me, is four pounds eight ounces per head, viz.: short wool, three pounds four ounces; long wool, seven pounds ten ounces. From the experiment of Col. Hampton with the Bakewell sheep, continued for many years, I feel confident that this variety of sheep is best adapted to our pasturage and climate. The wool is fully as fine as that of the same sheep in England—selling at twenty cents per pound, while that of the Merino or Saxon brings seventy-five cents; the difference of price, however, will be made up in the greater quantity of wool, and the heavier and fatter carcase of the Bakewell sheep. The mutton, as not only myself, but hundreds of others, can attest, is not surpassed by that of the mountains of Virginia, or that of the far-famed black-faced sheep of the hills of Scotland.*

Our whole State, between Columbia and Charleston, *is well adapted to the raising of sheep*. Our greatest enemies are the dogs. To avoid this annoyance, Col. Hampton has a shepherd, whose business it is to attend to the sheep and cattle during the day, and to pen them at night. He possesses another important desideratum in a pair of shepherd dogs, imported from Scotland, that appear well adapted to our climate, and they exhibit all the sagacity and activity of the shepherd's dog of Europe—bringing up not only the sheep but cattle, circling round the stragglers, and are of as much use in herding the flocks as twice the number of men. The larger varieties of the shepherd's dog, that is in common use on the Swiss Alps, would probably be still more useful than the shepherd's dog of Scotland; inasmuch as they remain with the sheep and goats all night, even in the absence of the shepherd; and not only give battle to the wolf, but destroy every cur that approaches the flock.†

The poultry establishment is ingenious and ornamental. It appears, however, to have been constructed too closely after the plan of similar establishments in England and colder climates. A disease like the cholera, for which no remedy has as yet been found, has attacked and destroyed the poultry. A more open and airy situation, the various buildings further removed from each other, with shade trees, leaves, and shrubbery, where the

* It is to be presumed that the fleece in this case was the first clip, and therefore as old as the sheep.—How much will she shear next, at the end of a year?—Will Dr. P. note? That Col. H. kills fat mutton direct from his *pastures*, at all seasons, without the aid of grain, which his sheep never smell, is well known by all who have the pleasure to get their knees under his mahogany—a pleasure, when once enjoyed, not to be forgotten.—*Ed. P. L. & A.*

† We were lately told by the Hon. Mr. Marsh, of Vermont—a gentleman of large possessions as well as of very enlarged mind—that he had found that he could not carry his sheep through the year for less than (we think he said) from \$1.10 to \$1.30 a head. We doubt if the snow ever covers Col. Hampton's fields long enough to admit of his sheep being fed with corn-blades even; and as for grain, they'd turn away and look sheepish, in ignorance of what it meant. Our flocks of sheep must finally travel southward, and the loom will follow them. It ought to precede, and the sheep will be sure to gather around it. Supply will follow demand. In regard to the absence of the larger Alpine wolf-dog, we hope it will not be long before we have the pleasure to fill that gap.—*Ed. P. L. & A.*

poultry could scratch and find insects, grasses, &c., is best adapted to our climate.*

I observed that the lawn in front of the mansion was planted with the American or wild canary grass, (*Phalaris Americana*.) It is perennial, of a dark green colour, and is decidedly the most ornamental grass for lawns and borders of gardens that has as yet been cultivated in our country. The original plants were obtained from James Rose, Esq., whose garden has, for many years been ornamented by it.

Col. Hampton has been equally successful in cultivating a grass for hay—the native rice-grass of our State, (*Leersia Oryzoides*.) It grows only in wet situations, and succeeds best where it is partially overflowed by water. He has converted some of his low lands into a meadow, where the rice-grass is cultivated, and produces immense crops of the finest hay. This grass, however, to produce hay in perfection, should be mowed before it is ripe; as, like timothy and clover, its value is lessened as the stalks grow hard. It should be cut twice at least in summer; and I have no hesitation in saying that it will produce a more abundant crop of the very best hay that can be cultivated in any country.†

I observed another improvement at the plantation of Col. Hampton, in the capacious cisterns which had been built in the vicinity of his negro houses, affording at all times the purest and most wholesome water for his domestics. In order to be profitable and useful to the planter, his labourers must be well clothed and fed, and above all, they must, in order to be healthy, be supplied with wholesome water. Had the latter fact been well understood by planters, hundreds of lives might have been prolonged. The removal of negro settlements from a locality where the water was impure, to the vicinity of pure water, has been found to be a preventive of many diseases, and has added greatly to the population of a plantation.‡

I have no hesitation in saying that Col. Hampton has, by his importation

* We hardly know how to account for it; but we have never known one of those costly poultry establishments, built without regard to expense, by gentlemen, that succeeded. If you want to make sure of eggs and chickens, settle an old negro woman in the woods, drive her down two forks, and throw a ridge-pole in the crotch of them; give her as many fence-rails as will build her a hen-house, cover it with shavings and sods, and give her a blood-red or a dominica cock, and eight hens, and let her have the run of your mill or corn-house—and she will supply you with what you want. Col. Hampton has sometimes bought from his own negroes, as many as five hundred chickens in a season: some of them, perhaps, more than once!—*Ed. P. L. & A.*

† Would the Colonel or Mr. Rose be so good as to send us some seed of these grasses this autumn, if to be conveniently saved? Our friend Bacot, of the Charleston Post-office, or the chief thereof, unexcelled as *men* and *officers*, whatever their politics, will either of them forward them to the *Ed. P. L. & A.*?

‡ There are two things greatly neglected, which must, sooner or later, be generally practised with great advantage and economy: one is the more general construction of cisterns, to be filled from the roofs of houses, and thus, when filtered and iced, an abundant supply will be secured, at all times easily accessible, and making the purest and the best drinking water. The other is the procurement, in thousands of situations, of streams of flowing water, to be had at your kitchen door or barn door, by *boring*. We have long been surprised that some *peripatetic* mechanic has not started through the country with his *boring apparatus*! How much more useful would it be, than the boring which is practised in a certain great body that all of us wot of.

In Fond du Lac, Wisconsin, says a Western paper, they have bored to about 150 feet only and found a good supply of water. The water is of a beautiful soft quality—sometimes a little impregnated with sulphur—and is delivered at the surface or as much above within 39 feet as is desired. The cost is comparatively small. Contractors deliver it at the surface, finding every thing, for \$100. The boring is done by two men with entire ease, whatever may be the depth. A slight stratum of rock, commonly not over three feet, is passed. This is worked through with a drill, to which a cable-rope instead of

and liberal distribution of the various breeds of domestic animals, the introduction of many useful productions of grasses and grains, and the humane and skilful management of his plantation, fully merited the title of a benefactor of our Southern country.*

CONDITION OF LANDED PROPRIETORS IN IRELAND.

ANOTHER remarkable instance of the almost insurmountable difficulties which beset the path of some Irish landlords, is forcibly illustrated in a letter addressed to Lord John Russell, by Mr. William Leader, of Rasnalee, in the Union of Kanturk, and county of Cork. This gentleman, it appears, is a landlord in fee, cultivating, with the aid of an experienced Scotch agriculturist, a farm of manageable extent and superior quality, consisting of two hundred and forty arable Irish acres, exclusive of forty acres of young wood. The ground is in the highest state of cultivation, and yet he says he has not derived one shilling of income from it for the last year, all being swallowed up in the following rates and taxes :

Two county rates,	£39 15 10
Poor rates, made 27th November, 1847, at 3s.	51 9 0
“ made 18th March, 1848, at 6s.	102 18 0
“ made 26th September, 1848, at 2s. 6d.	42 17 6
Quit rent,	2 18 9
Road rate of 2½d. per lb.	4 11 5½
Tithes,	6 0 0
In all,	250 10 6½

Or, £1 0s. 10½d. an acre.

Mr. Leader thus continues his statement :

“In the above calculation I have not included £45 poor rate paid for a bolting-mill on this land—a species of property free trade has rendered all but valueless ; and, if added, it would raise the rates to £1, 5s. 5½d. an acre. Owing to the failure of the wheat crop, and the low prices of cattle, and every other agricultural commodity, I did not make this rent off my land, and I am now at a positive loss. Thus, my lord, you may perceive that it does not require an encumbered estate to ruin its owner in Ireland. A fee simple, unincumbered, well cultivated one, as mine, without a pauper on it, can, under the present laws, effectually do it.”

rods is attached. The bore is lined throughout with sheet-iron pipe, which follows the drill as fast as it proceeds.—*Ed. P. L. & A.*

* The arrangements for care of the negro children, and attention to the aged, the sick, and the infirm, are truly admirable. Every provision is made that forecast and experience can suggest and benevolence supply, in the way of nurses, dietary, hospitals, and the prompt attendance of experienced physicians in critical cases—and this, though carried to great perfection at Millwood, is general in the South. Nothing seemed to strike Mr. Robinson—the celebrated agricultural writer for “The New York American Agriculturist,”—more emphatically than the kindness of Southern masters to their slaves, and their ample and even generous allowance of food and clothing. Speaking of the plantation of Col. Preston, on the Mississippi—the brother-in-law of Col. Hampton—he says :—

“I counted in one ‘quarter,’ (the name given to the negro houses,) upwards of thirty double cabins, all neatly whitewashed frame houses, with brick chimneys, built in regular order upon both sides of a wide street, and which, it is the law, must be kept in a perfect state of cleanliness. Feeding the force on this place is not quite equal to feeding an army, but it takes nine barrels of pork every week, which, at an average of \$10, is \$4680 per annum, cash out, for that item alone. The regular allowance of pork to all field hands, is four pounds, clear of bone, per week, with as much corn meal as they can eat, besides molasses, sweet potatoes, vegetables, and occasional extras of fresh beef and mutton. Children’s rations, 1½ pounds of pork per week, and full supply of other things.”

[Entered according to Act of Congress, in the year 1849, by JOHN S. SKINNER & SOX, in the Clerk's Office of the District Court of the Eastern District of Pennsylvania.]

THE AGRICULTURAL SCHOOL-BOOK.

ROADS.

FIRST LESSON.

THERE are few things that indicate more truly the degree of prosperity in a district or neighbourhood than the condition of its public roads. There is no greater labour-saving invention than that of good roads, and among those that are in existence, the difference as to ease, rapidity, and economy of transportation, caused by the various degrees of skill and labour bestowed upon them, is much greater than is usually imagined, particularly by farmers, whom they most concern.

One important difference lies in the grades, or longitudinal slopes of a road. Suppose that a road rises a hundred feet in the distance of two thousand feet. The ascending slope is then one in twenty: that is, in advancing twenty feet, you rise one foot; and, as it can be proved, one-twentieth of the entire load drawn over it in one direction must actually be *lifted up* this entire height of one hundred feet. But upon such a slope a horse can only draw *one-half* as much as he can upon a level road, and two horses will be needed on such a road to do the usual work of one. If the road is skilfully constructed, and made level, by going round hills instead of over them, there will be a saving of one-half of the former expense of carriage on it.

Another great difference in roads lies in the nature of their *surfaces*; one being hard and smooth, the other soft and uneven. On a well-made road of broken stone, a horse can draw *three times* as much as he can upon a gravel road. By making, then, such a road as the former in the place of the latter, the expenses of transportation will be reduced one-third of their former amount. So that two-thirds will be completely saved, and two out of three of all the horses formerly employed can then be dispensed with.

If such an improvement can be made for a sum of money, the interest of which will be less than the total amount of the annual saving of labour, it will be true economy to make it, however great the original outlay; for the decision of all such questions depends on considerations of comparative profit.

The profits of such improvements are not confined to the proprietors of a road, (whether towns, or companies, remunerated for these expenditures by tolls,) but are shared by all who avail themselves of the increased facilities—consumers and producers as well as road owners. If wheat be worth in a city a dollar per bushel, and if it cost 25 cents per bushel to transport it thither from a certain farming district, it will there necessarily command only 75 cents. If now, by improved roads, the cost of carriage is reduced to 10 cents, the surplus—15 cents on each bushel—is so much absolute gain to the community, balanced only by the cost of improving the road. Supposing that a toll of five cents will pay a fair dividend on this, there remains 10 cents per bushel to be divided between the consumer and the producer, enabling the latter to sell his wheat at a higher price than before, while at the same time the latter obtains it at a less cost.

Agriculture is thus directly and likewise indirectly dependent in a great degree upon good roads for its success and rewards. *Directly*, we have just seen these roads carry the productions of the fields to the markets, and bring them in return their bulky and weighty materials of fertilization, at a cost of labour which grows less and less as the roads become better. *Indirectly*, the cities and towns, whose dense population and manufacturing in-

dustry make them the best markets for farming produce, are enabled to grow and extend themselves indefinitely, by roads alone, which supply the place of rivers, to the banks of which these great towns would otherwise be necessarily confined. While, therefore, it would be an inexcusable waste of money to construct a costly road to connect two small towns which had little intercourse, it would be equally wasteful, and is a much more frequent short-sightedness of economy, to leave unimproved, and almost in a state of nature, the communications between a great city and the interior regions from which its daily sustenance is drawn, and into which its own manufactures are conveyed. Among the most remarkable consequences of the improvement of roads, is the rapidly increasing proportion in which their benefits extend and radiate in every direction, as impartially and benignantly as the similarly diverging rays of the sun. Around every town or market-place, we may conceive a number of concentric circles to be drawn, enclosing areas from any part of which certain kinds of produce may be profitably taken to the town, while from any point beyond each circumference, the expense of the carriage of the particular article would exceed its value. Thus the inner circle, at the centre of which is the town, may show the limit in every direction beyond which perishable vegetables, or articles very bulky or heavy in proportion to their value, cannot be profitably brought to market; the next larger circle may show the limit of fruits; and so on. If, now, the roads are improved in any way, so as in any degree to lessen the expense of carriage, the radius of each circle is correspondingly increased, and the area of each is enlarged as the *square* of this ratio of increase. Thus, if the improvement enables a horse to draw twice as much, or to travel twice as fast as he did before, each of the limiting circles is expanded outward to twice its former radius, and embraces *four* times its former area. If the rate of improvement be three-fold, the increase of the area is *nine-fold*; and so on. All the produce, industry, and wealth which by these improvements finds, for the first time, a market, is as it were a new creation.

Supposing that by these improvements the average speed over a whole country be only doubled, the whole population of the country (to borrow a metaphor from an accomplished writer) would have advanced in mass and placed their chairs twice as near to the fire-side of their metropolis, and twice as near to each other. If the speed were again doubled, the process would be repeated; and so on. As distances were thus gradually annihilated, the whole surface of the country would be as it were contracted and condensed, till it was only one immense city: and yet, by one of the modern miracles of science wedded to art, every man's field would be found not only where it always was, but as large as ever it was, and even larger, estimating its size by the increased profits of its productions.

QUESTIONS.

1. Why are good roads a labour-saving invention?
2. Why is the grade of a road a matter of great importance?
3. What is the difference in expense in hauling on a level road and on a road with an inclination of one foot in twenty? and why, then, this difference?
4. What is said of the difference in the surfaces of roads?
5. If a road can be so improved as to enable one horse to draw upon it a load that before required three, what amount of money can with good economy be laid out upon the improvement?
6. Are the profits of a road confined to its actual owners?
7. How do you prove this?
8. How is the agricultural interest directly benefited by good roads?
9. How indirectly benefited?
10. Among the remarkable consequences of the improvement of roads is what?
11. Show how these benefits extend?
12. What is the effect upon a community by doubling the speed of its communications?

SECOND LESSON.

ROADS. (*Continued.*)

As the limits of this work will not admit of an extended treatise on road-making, we must be content with giving such general directions for their construction as every farmer should be acquainted with.

There are five important points to be considered in the construction of all roads—1. Their direction. 2. Their slopes or inclinations. 3. Their cross section. 4. Their surface. 5. Their cost.

IMPORTANCE OF STRAIGHTNESS.

Every road—other things being equal—should be *perfectly straight*, so that its length, and therefore the time and labour expended in travelling upon it, should be the least possible; *i. e.* its *alignemens*, or directions, departing from one extremity of it, should constantly tend towards the other.

Any unnecessary excess of length causes a constant three-fold waste: firstly, of the interest of the capital expended in making that unnecessary portion; secondly, of the ever-recurring expense of repairing it; and, thirdly, of the time and labour employed in travelling over it.

ADVANTAGES OF CURVING.

The importance of making the road as *level* as possible, will be explained in the next section. And as a road can in few cases be at the same time straight and level, these two requirements will often conflict. In such cases, *straightness should always be sacrificed to obtain a level or to make the road less steep*. This is one of the most important principles to be observed in laying out or improving a road, and it is the one most often violated.

A *straight* road over an uneven and hilly country, may, at first view, when merely seen upon the map, be pronounced to be a *bad* road; for the straightness must have been obtained either by submitting to steep slopes in ascending the hills and descending into the valleys, or these natural obstacles must have been overcome by incurring a great and unnecessary expense in making deep cuttings and fillings.

A good road should wind around these hills instead of running over them, and this it may often do without at all increasing its length. By way of illustration, take an apple, lay it upon a table, and draw a level line from stem to eye, by going round it, and it will not be found one particle longer than if the line were drawn between the same points passing over the top. Precisely so may the curving road around a hill be often no longer than the straight one over it; for the latter road is straight only with reference to the vertical plane which passes through it, and is curved with reference to a horizontal plane; while the former level road, though curved as to the vertical plane, is straight as to a horizontal one. Both lines thus curve, and we call the latter one straight in preference, only because its vertical curvature is less apparent to our eyes.

The difference in length between a straight road and one that is slightly curved, is very small. If a road between two places ten miles apart, were made to curve so that the eye could nowhere see farther than a quarter of a mile of it at once, its length would exceed that of a perfectly straight road between the same points by only about one hundred and fifty yards.

But even if the level and curved road were very much longer than the straight and steep one, it would almost always be better to adopt the former, for on it a horse could safely and rapidly draw his full load, while on the other he could only carry part of his load up the hill, and must diminish his speed in descending it. As a general rule, the horizontal length of a road

may be advantageously increased, to avoid an ascent by at least twenty times the perpendicular height which is to be thus saved; that is, to escape a hill a hundred feet high, it would be proper for the road to make such a circuit as would increase its length two thousand feet. Farmers are too unwilling to allow a road to run through their farms in a winding line. They attach more importance to the squareness of their fields than to the improvement of the lines of their roads; not being aware how much more labour is wasted by them in travelling over these steep roads, than there would be in cultivating an awkward corner of a field.

This feeling is carried to such excess in some of the Western States, that the roads run along the section lines, and as these invariably point north, south, east, or west, it follows that a person wishing to cross the country in any other direction, must do so in rectangular zigzags.

QUESTIONS.

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| <ol style="list-style-type: none"> 1. What are the important points to be considered in the construction of roads? 2. Why is straightness important? 3. What is the effect of unnecessary length? 4. Straightness should always be sacrificed to what? 5. Why may a straight road merely seen upon the map, be generally pronounced a bad road? 6. How do you prove that a road may wind around a hill without increasing its length? 7. Is there any great difference in the length of a road slightly curved, and one that is straight? | <ol style="list-style-type: none"> 8. What is the difference in the length of two roads between two points ten miles apart, when one road is so curved as to prevent the eye from seeing farther than a quarter of a mile of it at a time, and when the other is straight? 9. What is the general rule by which the horizontal length of a road may be increased to preserve a level? 10. Why should farmers sacrifice the shape of their fields to winding roads? 11. What is the effect of this prejudice among farmers in the West? |
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THIRD LESSON.

SLOPES.—LOSS OF POWER ON INCLINATIONS.

Every road should be *perfectly level*. If it be not, a large portion of the strength of the horses which travel it will be expended in raising the load up the ascent. When a weight is drawn up an inclined plane, the resistance of the force of gravity, or the weight to be overcome, is such a part of the whole weight as the height of the plane is of its length. If, then, a road rises one foot in every twenty of its length, a horse drawing up it a load of one ton, is compelled to actually lift up one-twentieth of the whole weight—*i. e.* one hundred pounds through the whole height of the ascent, besides overcoming the friction of the entire load.

The power of a horse, owing to its anatomical form and great weight, is much diminished upon an ascent, and in even a greater ratio than that of a man. Though a horse on a level is as strong as five men, yet on a steep hill it is less strong than three; for three men, carrying each one hundred pounds, will ascend faster than a horse with three hundred pounds.

Inclinations being always thus injurious, are particularly so where a single steep slope occurs on a long line of road which is comparatively level. It is in that case especially important to avoid or to lessen this slope, since the load carried over the whole road, even the level portions of it, must be reduced to what can be carried up the ascent. Thus, if a long slope of one in twenty-four occurs on a level road, as a horse can draw up it only one-half of his full load, he can carry over the level parts of the road only half as much as he could and should draw thereon.

The bad effects of this steepness are especially felt in winter, when ice covers the road, for the slippery surface causes danger in descending, as well as increased labour in ascending. The water of rains, also, runs down the road and gulleys it out, destroying its surface, and causing a constant expense for repairs, oftentimes great enough to pay for a permanent improvement.

The loss of power on inclinations being so great as has been shown, it follows that it is very important never to allow a road to ascend or descend a single foot more than is absolutely unavoidable. If a hill is to be ascended, the road up it should nowhere have even the smallest fall or descent, for that would make two hills instead of one; but it should be so located, and have such cuttings and fillings, as will secure a gradual and uninterrupted ascent the whole way.

QUESTIONS.

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| <p>1. If a road be not perfectly level, how is a portion of the strength of the horse or horses expended?</p> <p>2. In drawing one ton up a hill that rises one foot in twenty, how much of the load is the horse compelled to lift up the whole height?</p> | <p>3. Is the power of a horse diminished upon an inclined plane?</p> <p>4. When are inclinations particularly injurious, and why are they so?</p> <p>5. Why are the bad effects of steepness particularly felt in winter?</p> <p>6. Why should the ascent of a road be gradual the whole way?</p> |
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FOURTH LESSON.

EARTH ROADS.

Roads of earth, with the surfaces of the excavation and embankments unimproved by art, are very deficient at all times in the important requisites of smoothness and hardness, and in the spring are almost impassable. But with all their faults, they are almost the only roads in this country, (the scantiness of labour and capital as yet preventing the adoption of better ones,) and therefore no pains should be spared to render them as good as their nature will permit.

The faults of surface being so great, it is especially necessary to lessen all other defects, and to make the road in all other respects as nearly as possible what it ought to be. Its grades should therefore be made, if possible, as easy as 1 in 30, by winding around the hills, or by cutting them down and filling up the valleys. Its shape should be properly formed with a slope of 1 inch in 20 each way from the centre. Its drainage should be made very thorough, by deep and capacious ditches, sloping not less than 1 in 125. Drainage alone will often change a bad road to a good one, and without it no permanent improvement can be effected. Trees should be removed from the borders of the road, as intercepting the sun and wind from its surface.

If the soil be a loose sand, a coating of six inches of clay carted upon it, will be the most effective and cheapest way of improving it, if the clay can be obtained within a moderate distance. Only one-half the width need be covered with clay, thus forming a road for the summer travel, leaving the other sandy portion untouched, to serve for the travel in the rainy season.

If the soil be an adhesive clay, the application of sand in a similar manner will produce equally beneficial results. On a steep hill these improvements will be particularly valuable. When a road is worn down into hollows, and

requires a supply of new material, its selection should be made with great care, so that it may be as gravelly as possible, and entirely free from vegetable earth, muck, or mould.

No sod or turf should ever be allowed to come upon the road, to fill a hole or rut, or in any other way; for, though at first deceptively tough, they soon decay and form the softest mud. Nor should the road-maker run into the other extreme, and fill up the ruts and holes with stones, which will not wear uniformly with the rest of the road, but will produce hard bumps and ridges.

The plough and the scraper should never be used in *repairing* a road. Their work is large in quantity, but very bad in quality. The plough breaks up the compact surface, which time and travel had made tolerable; and the scraper drags upon the road from the side ditches, the soft and alluvial matter which the rains had removed, but which this implement obstinately returns to the road.

A very good substitute for the scraper, in leveling the surface of the road, clearing it of stones, and filling up the ruts, consists of a stick of timber, shod with iron, and attached to its tongue or mass obliquely, so that it is drawn over the road "quartering," and throws all obstructions to one side. The stick may be six feet long, a foot wide, and six inches thick, and have secured to its front side a bar of iron descending half an inch below the wood.

Every hole or rut should at once be filled with good materials, for the wheels fall into them like hammers, deepening them at each stroke, and thus increasing the destructive effect of the next wheel.

The resistance decreases as the *breadth of the tire* increases on compressible roads, as earth, sand, gravel, &c.

QUESTIONS.

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| <ol style="list-style-type: none"> 1. What is said of the grades of an earth road? 2. How should its shape be formed? 3. How is the drainage performed, and what are its effects? 4. What is done in case the soil is a loose sand or an adhesive clay? 5. How are the ruts and holes in an earth road to be filled up? 6. Why is turf or sod not to be used? | <ol style="list-style-type: none"> 7. What are the objections to stone for filling ruts? 8. Why is the plough to be rejected in repairing roads? 9. What substitute for the scraper is recommended? 10. Why should ruts be filled immediately? 11. What will decrease the distance on dirt roads? |
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[The Editors are indebted, in a great measure, for what is most useful in these lessons to Professor Gillespie's admirable work on road-making, that ought to be in the hands of every reading farmer.]

Wool in Michigan.—The amount of wool exported from the State of Michigan in the year 1848, exclusive of the amount manufactured into cloth for home consumption, was 968,416 lbs., valued at \$213,851 50. The exports for the year 1848, it is expected, have exceeded those of 1847. The number of sheep in the State is estimated at 400,000 to 500,000.

Spare Volumes, and Volumes Wanted.—N. B. Our set of Vol. III. "American Farmer," is incomplete, and we have some duplicate volumes, that might perhaps be exchanged to mutual advantage. The same as to "The Turf Register and Sporting Magazine." We should be glad to hear from any one in the same category with ourselves.

VALUE OF CORN STALKS AS FODDER.

THE question is often asked, if corn stalks are of much value as fodder? We answer, without fear of contradiction, that if well saved and properly used, they are fully equal to the same weight of good hay.

Last winter we fed three yoke of oxen on corn stalks, with the addition of no more food than we should have used with the best English hay. The mode of preparing them was as follows:—

The stalks were cut with the ordinary cylinder machine in pieces of half an inch in length, and placed in a hogshead; three gallons of boiling water, containing one gill of salt, was thrown in upon them, and the top of the cask covered with a blanket. The steam arising from the hot water swelled and softened the corn stalks to their original size, and when cold, a little ground feed was thrown upon them, and thus fed to the cattle.

The oxen worked hard all winter, each yoke bringing three loads per day, of more than a ton each, from a distance of three miles, and in the spring they were as well conditioned as in the fall.

When corn is raised to be pulled while green for boiling, the stalks will contain much more saccharine matter than when suffered to ripen. The stalks should be permitted to grow after the corn has been pulled.

Corn stalks may be grown for fodder, with much greater strength than hay, and entirely capable of supplying food for animals, without the addition of grain of any kind; and for milch cows it would be equal if not superior to any other food. We refer to the method adopted by Mr. Webb, of Delaware, for the purpose of making sugar.

As soon as the ears appear, pinch them off, and repeat this treatment twice; the consequence will be, that the juice of the stalks thus treated will contain as much saccharine matter as that of the sugar cane; indeed, we know of one experiment being made which gave the juice eleven degrees Beaume, while the juice of the sugar cane as grown in Louisiana is but nine degrees Beaume. This mode of growth, however, will only answer in such districts as from want of market find it unprofitable to raise corn for the ears. When this mode is adopted, the planting should be early, for the stalks will necessarily require a hot sun to cure them. If cut too late, the sugar contained in the juice will become acid before they are dry.—*Prof. Mapes.*

We have the greatest respect for Professor Mapes's opinions, and admire, almost to envy, his scientific acquirements. Questions in natural philosophy, abstruse and difficult to ordinary minds, seem to be like A B C to him; but we doubt, nevertheless, whether corn-stalk fodder, cured by any process, as food for animals, "without the addition of grain of any kind," would be found "equal if not superior to any other food." We should apprehend, for instance, that any given number of stalks, left to ripen its grain, and then steamed, as the Professor recommends, along with the meal of its own grain, would make a better feed for a milch cow, than any preparation of the same stalks cured after the method adopted by Mr. Webb, of Delaware, for the purpose of making sugar, and which has gone no further; and only then produced the result which Professor Mapes in his Library would have foretold. But in the absence of more exact trial, we should be disposed to defer to Professor Mapes's opinion. We have often lamented, and so said, that the American Institute, instead of availing itself of the *prestige* of such names as Mapes and Underhill, to give eclat and credit to their establishment and proceedings, did not at once tempt them, with adequate and suitable inducements, to lecture regularly on the scientific principles of agriculture and horticulture, and to analyse thoroughly substances, of the exact nature and elements of which the farmer has daily occasion to be informed.

How long has it been, for instance, since a gentleman of Paterson urged the Institute to have a thorough analysis made of Indian corn, offering himself to contribute one hundred dollars towards the expense?

We have every reason to doubt our own impressions, too, when we differ,

as we respectfully do, with Professor Mapes, in his judgment as to the character and value of the Transactions of the American Institute for 1847. In a ponderous volume of more than 800 pages, distended by no less than six orations at one show, there must needs be, almost of course, some valuable matter. The contributed thoughts of such minds as those of the Professor himself, Dr. Underhill, Col. Clarke, and C. H. Hall, and a few others, who, when in the city, enlighten these meetings by their occasional attendance, would alone, and do go far to redeem the unconnected wishy-washy stuff of which the proceedings of the New York *Farmers' Club*, will be found, on examination, to be in a great measure composed. But to put upon the public, at the expense of the State, such a mass of superficial and desultory matter, including the everlasting and outlandish translations "*by him*," from the *O. Auxiliador-da-Nacional*, the *Annales de la Societe Royale d'Horticulture*, &c., about "*artificial alcaloides*," "*primivexes*," &c., as fair and creditable specimens of what a National Institute, backed by the State of New York, is doing to accelerate and illustrate the progress of agricultural science and improvement, is not, in our humble opinion, quite what the public has a right to expect from those who boast that in "*promoting industry and improvements in the departments of agriculture and the arts*," they present "*an example of economy, industry, liberality, and devotion to the public good, that challenges a comparison with any other institution, in this or any other country!*"

Disavowing and despising all insinuations from whatever quarter, of personal ill-will to the Institute, *per se*, for which no possible motive could be imputed, but the contrary, we only claim the right, as we feel the obligation, to express our opinion for what it is worth, as regards the use they make of the funds placed at their command for the benefit of agriculture.

From the Union, August 1, 1849.

MANUFACTURERS WANT CHEAP FOOD.

THE manufacturers of Great Britain have broken down the corn laws, which secured a monopoly in corn to the landed interest, which is the nobility, in order to let into their country the cheap food of other nations, and particularly of America. The cost of subsistence is an important element of price. Therefore, high-priced food added to the expense of manufacture, and interfered with the ability of the British manufacturer to compete with his rivals of other countries. In proportion as he reduced the cost of subsistence of his operatives, in the same proportion he could reduce wages, and the price of the manufactured article, and thus keep his hold upon the trade of other nations.

The American manufacturer has the *same object in view*, to be brought about by a process directly the reverse of that resorted to by the British manufacturer. Here we have a large surplus of food, for which our farmers *must find a market abroad*. They are therefore interested in opening the ports and markets of other nations for the sale of their flour, corn, and provisions. By multiplying markets, the American farmer increases the demand for his products, and consequently the *prices at home*. Now, as the cost of subsistence is an important element of the price of manufactured articles, the American manufacturer is interested in *reducing the price of food*, as well as of the raw material. He therefore is for having the ports and markets of foreign nations shut against our produce. That would keep the vast surplus of the products of our farmers at home, and *put the prices of them at the mercy of the manufacturer*. As the surplus of agricultural products is now so large, if there were not a great outlet for them in the markets of other countries, they would lie on the hands of the farmer, to be taken at such prices as the manufacturer would be pleased to give, or perish.

The same is not only true of provisions, but of cotton, the great staple of the country, and the material upon which depend our manufactures, commerce, and exchanges to a very great extent. If the manufacturers of other countries could be broken down, and thus the foreign market for cotton destroyed, the result would be *that our manufacturers would have it in their power to control the price*, and to purchase it at such rates as they pleased. If prices were, in their estimation, too high, they could stop their machinery for a few months, discharge their operatives, refuse to purchase the raw material, and thus reduce

the price. In short, they would control it completely. *It is the competition of the world which will contribute most to the interests of the American planter and farmer.* Their interests are too vast and too mighty to be accommodated by the demands of a home market.

In a former page of this number, we gave a portion of an article from *The Union*, and we did so because we desired to show to our readers an extraordinary blunder of "Common Sense" reproduced and adopted as their own by the editors of that journal. On reflection, we have concluded to give the remainder of it, as we now do above, that our readers may be enabled fully to understand the grounds upon which they are desired to repudiate the doctrine which teaches that the farmer and planter are benefited by the adoption of measures tending to compel the loom and the anvil to take their natural places by the side of the plough and the harrow. We are anxious that the arguments of our opponents may be read, that their flimsiness may be fully appreciated.

We are here informed that the surplus of our food is so large, that had we not "a great outlet" for it abroad, it would perish in the hands of the farmer. What is its extent, and what now becomes of it? In an article now going the rounds of the papers, and that *ought* to have originated in *The Union*, as it certainly embodies the views entertained by its editors, our annual surplus of food is stated at the enormous quantity of three hundred millions of bushels, for which we need a foreign market.

What now is the extent of this great outlet, so important to our farmers, and what reliance can be placed on its permanence? In the nine months following the first of September in the three past years, our exports to England, the only market in question, were as follows:—

	1846-7.	1847-8.	1848-9.
Wheat and flour .	1,178,072 qrs.	104,720 qrs.	543,598 qrs.
Indian corn and meal	1,767,172 "	374,324 "	1,197,576 "

The whole quantity of wheat and flour imported into England in *six* months from Sept. 5, was 3,534,474 quarters, and we sent in *nine* months 543,598, which would give us about *one-eighth* of the trade. Supposing our whole export to be continued to the same extent in future years, and to amount, on an average, to 20 millions of bushels, what shall we do with the remaining 280 millions? What do we now do with it? What shall we do with it when it shall double in amount, as we are promised that it will do?

Hitherto we have supplied England almost exclusively with flour; but a different state of things has now arisen. The import thereof into that country in six months from Sept. 5 was 1,600,000 barrels, of which we supplied 835,693, or little more than one-half; and the latest advices, at the time at which we write, inform us that much of the flour imported from this country into Liverpool was offered at 21s. per barrel, or almost precisely five dollars, and would net to the shipper, at a freight of only 2s. 6d. per barrel, \$3 20. The policy of the government has driven capital into the building of ships, until freights have become almost nominal, and the loss to the ship-owner goes temporarily to the farmer; but such a state of things cannot long continue, and as freight gradually rises, wheat and corn must go down.

Thus far, the demand abroad for our grain has been maintained by the same circumstance that has destroyed the demand for cotton—the hostilities that have interfered with the trade of the Baltic, the great source from which England derives her chief supplies of food. That cause is now about to be removed, and hence it is, in part, that cotton has risen, as grain has fallen and must continue to fall. We are now driving tens and hundreds of thousands of people to the West, there to become producers of food, when they would have preferred to remain at home, consumers of food; and we are doing this *on the faith of our being able to supply one-eighth of the food imported for the consumption of the workmen of England*, while we are confidently

assured that if we could have the supplying of *the whole quantity* of food, *domestic and foreign*, consumed by the iron, cotton, and woollen interests of England, it would make no impression upon our great surplus! Surely, the men who say and do such things as these must be among the wisest of their generation!

A few days since we visited Schuylkill county, recently one of the most flourishing portions of Pennsylvania. Every thing was there in a state of paralysis. The demand for labour had, literally, no existence. The manual labour and the machine power there provided, and all to be maintained and preserved, are sufficient for the weekly production and transportation of 60,000 tons of coal per week, worth \$240,000; but the destruction of the iron trade, and the cotton and woollen trades, and the paper trade, and the hat trade, and all other trades, has so far diminished the power to consume fuel, that the demand for the year will be supplied by 30,000 tons, worth less than \$120,000. Here is a weekly loss to the community of \$120,000, or about six millions of dollars per annum, and a loss to the farmer and planter of six millions of dollars of market for their products; and the loss to the nation is as complete as if the same amount had been destroyed by fire. Nor is this all. In addition to producing 60,000 tons of coal, there is labour power now in that county adequate to the production of roads, machinery, houses, opening of mines, and other improvements, to a vast amount; but for these things there is no demand, and the labourer is unemployed, and unable to purchase food or clothing.

The result of all this is what might be anticipated. Those who can do so are flying to the West, to produce food for themselves; and those who cannot, are turning their attention to the cultivation of potato-patches, that they may cease to be obliged to purchase from the farmer. We should be glad if the editors of *The Union* would now inform us how the conversion of miners and mine labourers into potato-growers tends to diminish the surplus of food.

If they and their correspondents would but take the trouble to obtain some slight acquaintance with the subjects in regard to which they undertake to teach their readers, they would, certainly, we think, write much better than they do.

ON WIRE FENCES.

"*And there is no new thing under the sun,*" said Solomon—and who dare dispute his word? Some, perhaps, had imagined that *wire fences* were comparatively new; but look here at the old Memoirs of the Philadelphia Agricultural Society:—

Account of Wire Fences. By White and Hazard.

Read January 8th, 1816.

White's Town, 1st month, 2d, 1816.

FRIENDS:—The attention of the Agricultural Society having been frequently directed towards the discovery of substitutes for the usual expensive mode of fencing, and invited inquiries upon that subject, we make no apology for offering to their consideration a plan which not only presents a diminution of expense, but also to the farmer a source of very considerable profit.

It is to form rails of wire, and posts of living trees. In order to render the advantages apparent, we shall first present a statement of the expense of a common post and rail fence, and then exhibit an estimate of the cost, and, we trust, a reasonable average for the produce of a fence erected on the plan which we would propose.

Cost of a common fence for 100 acres for 50 years	\$3,080
Cost of a wire fence for " " "	1,751
Leaving, without any other consideration, a saving and consequent profit of	\$1,329

But, in addition to this, we must take into view that the whole produce of the trees will be a net profit. The amount of this will, in some measure, depend on the nature of the trees, as indicated by the richness of the soil, or the judgment of the farmer. We subjoin a catalogue of such trees as have occurred to us, as forming a sufficient variety, either in regard to the consumption of the farm, or to the supply of market. We consider that after ten years from the time of planting,

244 apple trees will annually produce, at \$1 each	\$244
30 cherry do. 50 cents	15
20 pear do. 50 cents	10
10 plumb do.	3
10 shellbark do. \$1	10
50 chestnut do.	12
20 walnut do. \$1	20
5 butternut do. (<i>Juglans Cinerea</i>) 1	5
5 English walnut do. (<i>Jug. Regia</i>) 1	5
250 buttonwood will spare from tops 24 cords fire-wood, at \$3 per cord	72
Multiply this annual amount by the 40 years given	15,840
From which deduct the cost of the fence, as above	1,751
Producing a net profit of	\$14,098

To the credit of the wire fence in the period of fifty years.

The interest on the annual produce, it is presumed, will be sufficient to keep the fences in repair, not only for fifty years, but a period beyond calculation.

An additional advantage will accrue from this disposition of the fruit and other trees, as the soil they have hitherto occupied may be thrown into arable and meadow land.

With regard to the strength of a wire fence, we do not hesitate to express our belief in its sufficiency to resist any attack it may be required. We have given it a fair trial at the Falls, with the most breachy cows of the neighbourhood, and it is remarkable that even dogs avoid passing over it.

In case of the wire breaking by any casualty, it is easier repaired than any other fence.

The wire No. 6 will sustain a weight of 1300 lbs., when stretched in the manner of a rail. No. 9, 750 lbs., and No. 11, 300 to 450 lbs.; ascertained by fair experiments for the purpose.

Respecting the duration of the wire, daily experience sufficiently speaks, that when protected by a coating of linseed oil or paint an entire reliance may be placed on it.

We conclude by recommending the subject to the investigation of the Society, informing them they may see a wire fence erected on this plan at R. Watkin's tavern, at the Falls of Schuylkill.

We are very respectfully,

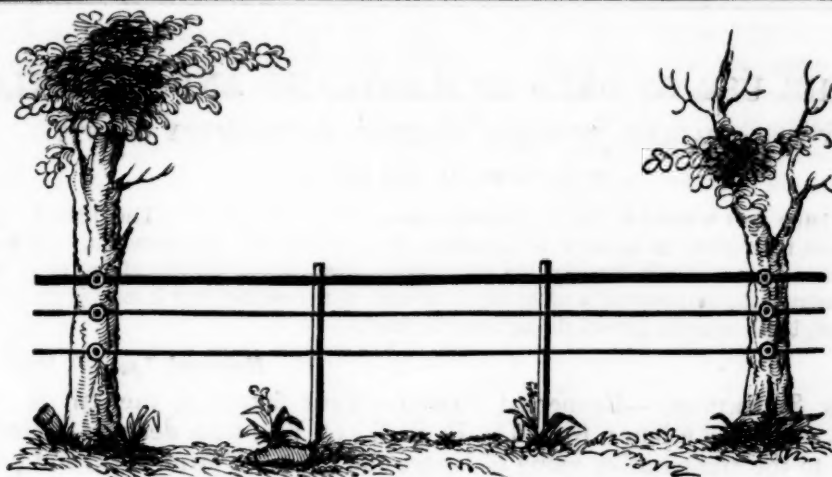
WHITE & HAZARD.

Hon. RICHARD PETERS, *President of the Agricultural Society.*

ESTIMATES.

Common post and rail fence, 5 rails high.

55 rails at 10 cents each, make a fence 100 feet, is	5-50
11 posts " 25 "	2-75
Putting up fence, holing and pointing, at 25 cents per panel	2-75
Cost of 100 feet	\$11-00
At the above rate, 11 fields of 9 acres each, and 1 field of 1 acre, will cost at once fencing (making 100 acres)	\$1,540
In 50 years the expense on the fence will be equal to another complete fence, and is	1,540
Total cost without interest for 50 years	\$3,080



A Wire Fence with living trees, &c., with 4 rails.

1 top rail, No. 6, weight 11 lbs., at 16 cents	\$1.76
3 under rails, No. 9, weight 20 lbs., at 17½ cents	3.50
6 live posts or trees, 18 feet apart, at 12½ cents75
6 small posts, to be set in with the live ones, close behind, and at equal distances apart, so that when the dead posts decay, the wire can be attached to the live ones, by moving the wire rails a few inches back75
Planting trees and posts, and putting up fence	1.50
10 space posts, 2 inches square, to set on the ground, or on a stone, the wires merely to run through, to keep them stayed in their places50
24 rivet head nails24
Linseed oil, to coat the wires07
	<u>\$9.07</u>

But to fence against hogs, add

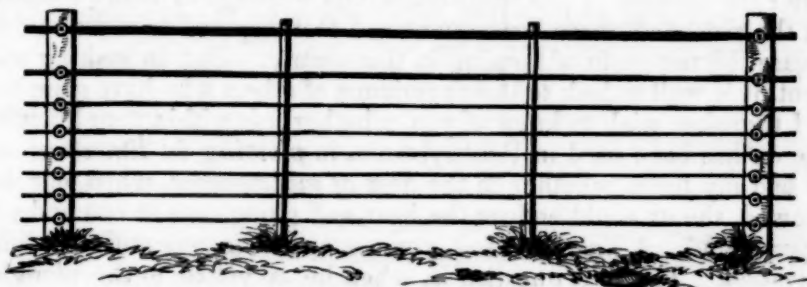
4 rails of No. 12 wire, weight 13 lbs., at 12 or 19 cents	2.61
94 round-headed nails24

Cost of 100 feet, against all cattle, hogs, &c. \$11.92

At the above rate, 100 acres, in 11 lots of 9 acres each, and 1 of 1 acre, will cost (and will last 50 years) \$1,751

This fence will produce from the fruit, fire-wood, &c., per estimate, \$396. Commencing ten years after setting out, so that in the 50 years there will be 40 annuities of that amount. Amounting in the whole to 15,840

Net profit of the two fences in 50 years, without interest. \$14,089



Wire Fences with dead posts.

5 rails No. 12 wire, 100 feet long, will cost, including all contingencies, for a complete fence, or say less than 70 cents per panel of 9 feet	\$7.58
Or with top rail No. 9, and four others No. 12, cost less than 80 cents per panel	8.09
Or four rails No. 9, about 80 cents per panel	8.97
Or four rails No. 6, about \$1 per panel	12.12

NOTE. The increased demand for wood fences will *increase* their price.

But the demand for wire fences will *decrease* its price, as the greater the demand for wire, the cheaper it can be made.

ON THE USE OF OXEN IN MARYLAND AND VIRGINIA,

BY E. S. STABLER, OF SANDY SPRINGS, MONTGOMERY COUNTY.

WITH NOTES BY THE EDITOR.

THIS letter was written at the particular instance of the Editor of "The Plough, the Loom, and the Anvil," in answer to inquiries by a respected correspondent, and was designed to be sent to him directly, but, for reasons given in a postscript of our own, we have assumed the responsibility of giving it at once to the public, that it may at once be read now, by thousands, spread throughout the land.

Harewood, 7 mo. 20, 1849.

JOHN S. SKINNER—Respected Friend—Your favour of the 7th is received, enclosing a letter from Dr. R. S. B., of Va., who desires information as to the comparative value of horses and oxen, for farm work, and particularly for the plough; and with the request to write an answer, "founded on your (my) knowledge and experience," &c. &c. True, I have "written nothing for 'The Plough, the Loom, and the Anvil;'" not because I am an uninterested spectator of its course, and success; I fully approve of the one, and my good wishes attend the other: but I have no wish or desire of notoriety, and some, I fear, are already tired of seeing my name before the public. It is a source of more gratification to me, and profit also, to read of the experience and practice of others, in agricultural pursuits, than any thing I can contribute to your pages. As the Dr. appears to be quite in earnest in his desire "to turn over a new leaf," and as I have for many years made constant use of oxen, and, under the existing circumstances, in preference to horses, for farm purposes, the plough included, I have no objection to give him the result of my "experience;" for I doubt not he would quite as willingly respond to a brother farmer, if called on for any information he might have to impart. The better to understand the views of each, I will here quote his letter. He says:

"I have been seriously contemplating an alteration in the mode of cultivating my lands in future; that is, to substitute the labour of oxen for that of horses. I have been driven to the idea, by the immense *consumption* of horses in the way of food. It is, however, difficult to break in upon long established customs, and he who makes the *first* experiment will generally encounter the derision of his neighbours, and a charge of being *visionary*. But, at the risk of all these consequences, I feel disposed to make the effort to increase the net profit of farming in this county. But, in making an experiment, it is well to look to the experience of others who have gone before you. I therefore wish to know of you, whether it is within your knowledge that the ox has been used in Pennsylvania, in *plowing in limestone soil*? I have had my fears, whether in the *heat of midsummer*, when our lands are fallowed, the ox could endure the heat, and plough one or one and a half acres per diem? A limestone soil, you are aware, is very stiff and difficult of cultivation. The next question is, when he is yoked to the plough, in what manner is it effected? Is a chain attached to the beam of the plough? and if so, it would appear to me that it would be difficult to control the depth of the ploughing.

"Can you not give a plate in your next number, as nothing reaches the comprehension so exactly as *seeing* any kind of machinery. I am happy to find that your paper has so good a circulation amongst us. I have endeavoured to do my share towards furthering this object."

Like many others with slender resources, (and in my case with impaired health, from a city life,) I began farming with horses to do my ploughing,

and, indeed, the farm work generally. I had also a yoke of oxen. With no experience in my new vocation, it was necessary to superintend considerable hauling for building, and it was here I was first made aware of the decided advantage of the ox, over the horse. The horses were not always true at the *pinch*, when every effort was required; and on the oxen we usually had to rely at last, to get out of our difficulties. There were other advantages in their use, evident at this early stage of my agricultural education, if not so important, yet quite as apparent. One was the expense of harness, eight to one, at least, in favour of the ox; and the time saved in getting to work—we could often yoke up, and get through with a short job, before the horses were harnessed and *ready* for work.

For the first year, I had no other expectation than to buy grain for my family and stock, expecting afterwards, and being determined to use every effort to raise at least enough for my own consumption; but the experience of a year or two fully satisfied my mind, that, without some change for the better, I could not get along at all. My horses not only consumed about all the grain they aided in raising, but I was compelled to buy more for their especial use and benefit. The farm was small, and withal very poor, and what with their consumption, farming was found to be a losing concern. But I had to make my living, either off my farm or by my "wits," for my health forbade a return to the city. The idea of going in debt was an alternative not to be entertained for a moment; another alternative, and which appeared quite as uncongenial to my feelings, was, to remove to the far West, and relinquish every tie of kindred and friends. This I determined never to do, unless to avoid actual want.

I was fully aware of the feeling referred to by Dr. B., of breaking "in upon long established customs;" and I had heard it often remarked, too, that oxen could not stand ploughing in the heat of summer—it might do to the North, &c. &c. I believe this was the generally received opinion, though probably adverse to that of some others, and to some extent, at least, practised by a few individuals, so far as to use oxen in the plough.

In 1822 or '23, I resolved to give the plan a fair trial; and, with this view, worked the oxen, and took hold of the plough-handles myself, and began in "midsummer" to break up a fallow field for wheat. For a day or two the oxen suffered greatly with the heat, in the middle of the day—but, by rising with the dawn, and resting two or three hours at noon, and also feeding on dry food, I found nearly as much was ploughed by the oxen as with the horses worked by a hired man, and quite as well done. The horses consuming about one bushel of grain per day, and the oxen none. The horses walked faster, but the oxen turned in less time, and the difference in amount of work was not very material. The oxen, though generally slower, will probably be found much the most *SURE*, by those who are placed under similar circumstances.

This was a "successful experiment," in every respect, and has been carried out to the letter; sanctioned also by subsequent experience and practice, for some twenty-five years. For many years there was not a furrow ploughed on the farm, except by oxen, which enabled me to begin, and to a considerable extent successfully carry out, a system of improving my nearly worn-out land. This could not have been effected (at least not by the best management I was capable of) by the use of horses alone, in any thing like the same time, or without more capital than was at my disposal.

To determine the best mode of working oxen to the plough, I used both the tongue and the chain; the latter was found preferable on all accounts. The team turns in less space, and in less time; and by it, the depth is also regulated with more facility, by merely lengthening or shortening the chain.

For the use of oxen, the beam should be set rather lower than for horses—14 to 15 inches is the proper height for the former, and 17 to 18 inches for horses—the line of draft being lower in the one than the other.

Oxen, if properly broken, quite as readily, if not more so, take to and keep the furrow, than horses. We do not think of having either a line or driver, even with a double yoke, and in the plough, except when “breaking in” young cattle—the word of the driver, or the motion of the whip, being all-sufficient.*

To judge of the capabilities of the ox, by the badly used, houseless, over-tasked, and half-fed animals we sometimes see in the yoke, is doing him great injustice. Treat the horse in the same unfeeling manner, and where would be his high mettle and noble spirit? he would speedily arrive at a premature old age, valueless to his owner, and a cast-off to feed the carrion crows. That the ox can better stand this harsh usage, is certainly no valid or sufficient reason that he should be subjected to it. Use him with equal care and humanity, and he will just as certainly, and with more profit, repay it to his owner.

I am not aware, nor do I believe, from much observation, that the “limestone land” referred to, is any more difficult to plough than mine, which is a stiff clay subsoil. Much that I have examined is easier to till. In breaking up our sward land for corn, we generally work two yoke, and go to the depth of from 7 to 9 inches. Oats usually follow corn, in my rotation, and to render the summer ploughing easier, for the following crop of wheat, (it is also better for the oat crop, and freer from weeds,) the oat ground is *always* ploughed with the bar-share—the difference in the after ploughing is material, be the season dry, or otherwise.

In hauling limestone with oxen, we readily make a trip, of five or six miles and back, in half to three-fourths of a day; and we have made the trip to Washington and back in 24 hours—distance 20 miles—and loads both ways, resting in the heat of the day, in warm weather.†

I usually keep two yoke of oxen to one pair of horses, the first cost being generally about the same, but here the parallel ends. It costs much less to keep, and in good order too, the two yoke, than one pair of horses, and they will do more work. The expense, and wear and tear of harness is fully as 8 or 10 to 1 in favour of the oxen; and for most farm purposes, such as hauling rails, stone, fuel and manure, they are decidedly preferable. We use them exclusively for hauling hay or grain into the barn. A single yoke will readily go in with a ton to a ton and a half of hay, and at an angle on the bridge of 5° to 6°. They understand the business perfectly‡—there is no need of the whip—at a single word, every muscle is exerted, and, if necessary, strained to the utmost. The same yoke, or a strong horse, by the aid of machinery, will unload the hay, and to any part of the mow, in from 8 to 12 minutes, according to the height to be raised, and while the hands are comparatively resting. But this is digression.

Add to the advantages above enumerated, the relative value of each team, after some five or six years’ service, under humane and proper treatment, and we find that while the horse has depreciated some 33, if not 50 per cent., the ox, with a season’s rest, and good pasture, is worth at least his

* The ox never mistakes his orders—never haws when told to gee, or gees when told to haw.—Ed. P. L. & A.

† The rate on the national turnpike, for horses, is from 14 to 16 miles a day.—Ed. P. L. & A.

‡ We have seen single yokes of oxen, at Worcester, Mass., back four tons of stone up a hill several hundred yards.—Ed. P. L. & A.

first cost in beef; and will suppose, (but such has not been the case with me,) that the horse has paid as liberally for his keeping in the mean time.*

In ploughing late in the fall, winter, or early in the spring, we usually feed our ox teams with grain, but only with half the quantity given to the horses, and then only when the work is long continued or very heavy. I have found it more satisfactory, and much more economical, to buy young cattle, say three years old, and break them ourselves, than to purchase those already broken, or *half* broken, which is more frequently the case, and not unfrequently "breachy," or with some other bad habit. Gentle treatment in breaking is quite as important as in the after-management; and they may about as readily be taught to "come under" the yoke, a distance of 50 or 80 yards, as to *run away* from it, and to spend half an hour to get them yoked; taking young steers from the drove, whilst fatigued with travelling, and the breaking is much more readily accomplished.

But it is scarcely necessary to give the Doctor a dissertation on this branch of the subject, as he would doubtless (and I would so advise him at the offset) procure such as were well broken to the cart at least; to get such accustomed to the plough, and to keep the furrow, is an easy transition. Nor is it necessary, I presume, to give "a plate," or cut, to explain the mode of attaching the team to the plough—it is quite plain, and readily understood. A good, well-shaped yoke and bows are very important items—quite as important to the comfort of the ox, as is an easy-fitting shoe to the man with corns on his feet. Every sensitive feeling in my nature has at times been aroused to witness the cruel treatment this poor drudge is often subjected to. Left by unfeeling task-masters to the still more careless and unfeeling drivers, I have seen oxen compelled to draw heavy loads, with neck and shoulders galled to the quick by a badly-fashioned yoke, when the almost constant use of the whip or the goad could alone induce an onward move—when in other hands, I have seen the ox team, at a single word from the driver, spring to the draft and exert every nerve, and that willingly, too, to do his allotted duty.

If I mistake not, you have given cuts in the past volume, [see pages 359, 360,] of good yokes, both double and single. The latter we have used in working corn, but, as I am now compelled to keep two horses, for the saddle and carriage, they also do this work. In the same volume are

* In the *Abstract* from the returns of all the Agricultural Societies, published annually by the State of Massachusetts, (small in proportion as it is superior for its intrinsic value, as compared with the mass of balderdash published at the public expense in the name of what is called the "New York Farmers' Club," under the "auspices" of the American Institute,) there is a report, by W. Proctor, which we take the opportunity, with pleasure, to transfer to our pages. It is on the subject of **PLOUGHING WITH SINGLE TEAMS.**

"From these experiments we learn, that an acre of land may be ploughed, by a single pair of cattle and one man, in four hours, and probably nearly two acres in a single day. When we take into view the expense of operating a team of this description, compared with those usually employed in this business, it will be quite well for our farmers to consider whether most of their work cannot be done with one pair of cattle, and if two are to be used, would it not be better to cut the first furrow of less depth, and apply the power of the second pair to a subsoil plough, to follow directly after? If we do not entirely mistake the signs of the times, our modes of preparing lands for culture will ere long be essentially modified, by the use of the *subsoil* plough. In the county of Worcester, where the management of land and teams is understood as well as in any part of the Commonwealth, the premiums are limited to *one pair of cattle, without a driver.*"

By driver, the Southern reader is to understand, a man to walk alongside, besides the ploughman. In Massachusetts they consider it against good management to offer premiums for horses—so decided is their conviction, generally, of the economy of the ox team for ploughing and hauling.—*Ed. P. L. & A.*

also two excellent essays on the breaking and management of oxen, to which I would refer the Doctor, should he desire more information on this important branch of rural management and economy; or, I will with pleasure give him any further information in my possession. As I am not apprized of the name of his post-office, please add it to the address, and forward to him.

I am, very respectfully, EDW'D STABLER.

We have forgotten the Doctor's exact address. His post-office is somewhere in the "valley" of Virginia—that is, in that splendid farming region between the Blue Ridge and the Alleghanies, drained by the Shenandoah, embedded throughout with limestone, and ornamented and shaded with sugar-maple and locust trees. The man who has skill and capital, and desires to enjoy the prospect of a beautiful farming country, and the matchless pleasure of visible improvement from his own industry and good management, need go no farther than to the Valley of Virginia, to set himself down as a farmer. But then he must content himself to listen, for the residue of his life, to pæans rung on the beauties of "free trade," and the sure blessings of dependence on foreign markets—markets to be depended on only in time of war, and famine, and pestilence abroad. The Virginians like to send the products of their industry, taxed with enormous cost of transportation and exchange, to a great distance, in search of customers, and to pay for cloth and iron made in England, by labourers over-worked and half-fed, while their own mountains, and even their alluvial lands, abound in coal and iron, and spread out congenial pastures of perennial freshness, for sheep without number, and mill-seats to convert the wool into cloth.

Thirty years ago, on the establishment of the old "American Farmer," without a single patron, (as in the case of "The Plough, the Loom, and the Anvil,") we were ordered to journey for our life, on horseback, to that glorious region, where the worshippers of Hygeia go for restored health to the delicious bath of the "warm springs," and the sparkling fountains of the "white sulphur." Never shall we forget the impression made by the view of the country in passing out from that magnificent break in the mountains at the confluence of the Shenandoah and the Potomac—nor the yet deeper impressions made on a heart then comparatively fresh and young, by the warm welcome and hospitality of such men as the Turners, the Holmeses, the Hites, the Caldwells, the Divers, the Minors, and even the sages of Monticello and Montpelier. But young people travelling, like young trees in the forest, find themselves everywhere surrounded by congenial friends, ready to cultivate their acquaintance and good will. Alas, "the noiseless foot of time," how it steals upon us! and when we have passed the hill-top, and begin to descend into the vale of life, how different the condition and the prospect! After a certain epoch, as we gain in years, we lose in favour with the world. Mankind learns instinctively to look on gray hairs as the symbol of inability, not of power, to confer either pleasure or substantial benefit. It is not in human nature to lean upon, or seek shelter under, or to cultivate intimacy with such, whatever may have been their services to the State, unless still palpably invested with power and authority to advance their fortunes. How much more genial the rays of the rising than of the setting sun! For ourselves, when less than twenty-five, we found it much easier to get access to the social fireside of a Jefferson or a Madison, a Monroe or a Crawford, than to be honoured with the privilege of the briefest interview with a modern cabinet minister.

On the trip through the valley referred to, we noticed particularly the appearance of the crops, and had opportunities to be instructed by the conversation of the leading men on our journey. And now again, lately, after an interval of more than a quarter of a century, we are forced to say, that while the people of that region fully maintain their excellence in the virtues of intelligence and hospitality, the face of the country has, according to our impression, rather deteriorated than improved. Has no one the means of comparing the average product per acre, of Jefferson, and Shenandoah, and other counties, in 1819 and 1849? We should rejoice to have our impressions corrected, on reliable data.

But our original purpose, from which we have run into all this digression, was to say, that, as we have forgotten the address of our respected correspondent, who inquired about the use of oxen, and to whom friend Stabler requested we should send this letter—and as we are sure he will see it here, and, with us, consider it a light not to be hid "under a bushel," we take the responsibility of publishing it, as it is, and for the benefit of all our readers, anticipating their thanks for doing so, in the confidence that we shall deserve them.—Ed. P. L. & A.

ALL ABACK!—DRAINING, LIME, AND GUANO,

SAID BY THE PRESIDENT OF THE AMERICAN INSTITUTE TO BE “DESTRUCTIVE TO ALL VEGETATION IN THIS DRY SOIL.”

SURELY “man never *is*, but always *to be* blessed” with reliable information in agricultural affairs! All our life long, or at least since, when a boy, we used to witness the admirable dexterity and sleight of Irish ditchers, at work, here and there, in Calvert county, Maryland, we had supposed it was, and would be, over a large portion of the country, highly useful thus to draw off from meadows and fields all superfluous water, whether concealed in the earth, as is often the case, or visible on its surface; to the end that the soil might be duly pulverized and warmed. To our simple apprehension, it seemed that the operation might be salutary, not only for the country and the land, but that to conduct such superfluous moisture most advantageously away, must require, too, some knowledge of geology, hydraulics, and other branches of natural and mechanical philosophy. As to the question of the great *utility of draining*, as applicable to *much* of the land *in all parts of our country*, it was not supposed that any doubt could be entertained on that point, until it was proposed as a question for discussion in what is called “The New York *Farmer’s Club*,” which meets bi-monthly in Broadway, at the American Institute. There, after raising the question, it was very profoundly remarked, that “*books* on agriculture frequently contain errors!” and that “draining is, to us, quite a different affair from what it is in the moist countries of Europe or elsewhere,”—and now again the “books” which are said to constitute the “principal sources of instruction” in agriculture, and the operation of *draining* as applicable to our country, are seen to be even derided by a gentleman whose public spirit and various intelligence, no less than his position at the head of a great “American” Institute, lends force and authority to all he says—rendering the more necessary, on that very account, a review of the sentence pronounced by him, as President of the Institute, and published by the State “at some considerable cost,” against the necessity and applicability, in our country, not of *draining* only, but of *lime* and *guano*!

But to come at once to what we propose to examine:—Will not the reader participate our surprise at seeing the following, from the “closing address” delivered by General JAMES TALLMADGE, President of the Institute, at its Twentieth Annual Fair, October 28, 1847?—that being the last of *six orations* pronounced on that occasion, all published by the State of New York, whose sanction lends additional weight to all that emanates, even as in this case, from the highest official authority.

“English books on agriculture,” says General Tallmadge, “*are our principal sources of instruction*. New York is about 41°, while England is situated at 50° to 60° of north latitude. *Their* climate, a considerable portion of the year, is one of rain and fogs. *Their* soil is clay—adhesive, cold, wet, and sour. *Their* books direct ‘*draining*,’ to lead off from their soil, or arable lands, the surcharge of water, and the free use of lime and guano, to impart heat and a vivifying power for vegetable production. Our climate is arid, and our soil is dry loam and sand. A place suited for draining is the exception, and not the rule, in this country. During our summer drought, the fountains are dried up, and vegetation burned. It is hard consolation,” adds the General, derisively, “at such a crisis, and when his *flocks* are *lowing*, to ask the husbandman to read a book on ‘*draining*,’ and directing the use of ‘*lime* and *guano*,’ (good in their place,) which experiment has shown to be *destructive to all vegetation* on this dry soil.”

Such being the sentence pronounced by the President of an "Institute" bearing the high title of *American*, and which attracts to it much of public attention, and, as they state, from 200,000 to 300,000 visitors to a single one of their exhibitions, and these opinions of our "principal sources of instruction" in agriculture, and of the value and applicability of "draining, lime, and guano," having been so far sanctioned by the State of New York as to be deemed proper to be published and distributed at the State's expense; it may be permitted, if not expected of the conductor of an agricultural journal, to examine the validity of such opinions, and their claim to be thus promulgated. Of our own crude notions to the contrary of all that is here said, there is this in their favour, if erroneous—that *they* will never be bruited over the country, at the cost of the State, in the shape of "Transactions," to be distributed, as premiums, through the American Institute, as, whatever may be said, *ex cathedra*, in reply to us, is sure to be—no small advantage, it must be admitted, to those who enjoy the privilege of having the State put forth whatever they prepare for publication.

First, then, as to the accuracy of the declaration that "English books on agriculture are our principal sources of instruction." We have no hesitation in saying, on the contrary, that American agriculturists do now, and have for the last half century, at least, depended for their instruction on "English books" as little, or less, than any other class of people whatever. Their instruction has been eminently practical, and almost too exclusively so, until within the last few years, and as *eminently American*—founded on *American* experience, detailed, explained, and illustrated by *American* farmers and *American* writers. Look back for more than thirty long years prior to the establishment of our numerous and able agricultural journals, which have for nearly that time been pouring a flood of light over the country!—go back to the Memoirs of the Agricultural Societies of *South Carolina*—of *North Carolina*—of *Virginia*—of *Philadelphia*—of *New York*—and of *Massachusetts*—and you shall see volume on volume, filled with very able, practical communications, founded on the results of experiment and field-practice *here*, at home, contributed by men uniting, in a remarkable degree, zeal, high character, close observation, and *wide American experience*.

If, in their proper public sphere, our statesmen and legislators had done half as much as our great and good men—our Washingtons and Jeffersons, Pinckneys, Madisons, Peters, Livingstons, Deans, Lowells, Pickerings, and others, have done by their writings to promote the cause of agriculture, and to raise it in the public esteem, we should not see it, as we now do, the very last to have departments and schools provided for its advancement. Yes, we repeat, let any man look to the published memoirs of the old societies to which we have referred, and see whether he does not find, considering the vast difference in our population, a greater number of very distinguished men, taking active part in their proceedings, than even at this day; and whether, moreover, these voluminous memoirs are not very remarkable for their indications of anxious inquiry, of extensive research, and various experience, and particularly whether they do not abound in proofs of independent thought, and practical American information; manifesting, in a striking manner, *exemption from dependence on "English books"* as their "principal sources of instruction?"

Examine the writings of Arator, which, from newspaper essays, took the form of a book, and had great currency at the time, and see if they are not as exclusively American in their texture and character, to compare small things with great, as Washington's Farewell Address itself.

We come, then, to the hundreds of volumes of agricultural periodicals, which have accumulated after having circulated far and wide over the whole

country, and supplying for thirty years, long before the American Institute came into existence, and constituting almost exclusively our "sources of instruction in agriculture," and they too, will be found filled, not with British theories, but with *American facts and experience*. Look at "Buel's Cultivator," at "Fessenden's New England Farmer," at the "Genesee Farmer," at Ruffin's "Farmers' Register," at the "American Agriculturist," and at the "Farmers' Cabinet," either of which has diffused more valuable light in one year, on agriculture, than the American Institute in the same period—and let any man answer whether it can be said, that with these, and a host of agricultural journals besides, "English books on agriculture *are our principal sources of instruction*"? It would, as we humbly apprehend, and in deference to the President of the American Institute, be much nearer the truth to say, that the very existence of the prejudice against English books, which may be fairly inferred, if it be not fomented, by such denunciations as here we meet with, has prevented editors from availing themselves of them to the extent which they might have otherwise profitably done, for their readers. Every man of common sense knows, that there is a wide difference between the climate of England, the cost of labour, the tenure of land, and many other circumstances, entering into all questions of agricultural economy, when we would draw conclusions from the practice of that country with a view of ascertaining what can profitably be done in this. This is so obvious, it floats so palpably on the surface of inquiry, and has been so often repeated, as to have become a stale truism, for which it would be ridiculous to claim the merit of discovery; yet, does it follow that there are not principles laid down in "English books," of universal application, worthy to be studied, as they relate to the form and structure of animals and machinery, to the construction of buildings, the analysis of soils, and the composition and use of manures, and various other things, in which, with her more ample means, greater experience, higher prices, and much more liberal premiums, to stimulate and reward genius and discovery, England, without any disparagement on our part, may be supposed to be ahead of us, and therefore worthy to be studied, even in her "books," with that due discrimination, the power of which may be accorded to all readers of ordinary understanding? If, indeed, she has nothing to teach us, nothing in her "books," that may serve as "sources of instruction," of what avail are the volumes that contain accounts of agricultural exhibitions for fifty years, where *pounds* are expended for *pence* given by the "Institute," out of its own proper funds, over and above the donation by the State, for *agricultural objects*? Of what avail have been the accounts which their books give us of the examinations, lectures, and course of instruction, at those noble schools of hers, so often and justly extolled, when it is found convenient to use them as arguments in favour of the "great school" to be placed "under the auspices" of the American Institute, *near the city of New York*? For it is to be observed, that as well here, in this "closing address" of the President, as elsewhere, "public aid" is asked of the State, to establish a school, always to be located "near this city"—a city of some 400,000 inhabitants—contrary to the declared experience of the renowned Fellenbergh, who expended a noble private fortune in the establishment of his school, in which he averred he could never have succeeded, if located "near" to a large city.

Far from deriding all resort to English books as sources of instruction, we much question whether an act of greater service could be rendered to American agriculture, than to compile, regularly and judiciously, one good-sized quarterly, from the two quarterlies published by the Royal Agricultural Society of England, and the Highland and Scotch Agricultural Societies—any single one of which contains more of original thought and valu-

able suggestion than a year's transactions of the New York Farmers' Club, were it not that these are sprinkled with suggestions, when they occasionally attend, from such men as Mapes, and Underhill, and Clark, and Hall, and a few others, giving to the mass of unconnected twaddle a certain degree of colour and richness, as the milk of a single Alderney will do to that of a dozen sky-blue milkers, fed on still slops—for some men are like some cows—they'll yield any quantity of words upon any subject, it matters not to them what. In fact, they don't wait to be drawn—"it runs, and runs, and will for ever run"—but, as to the *quality*?

We find, however, that so much space has been taken for this first allegation of the President, that we must defer to our next the examination of his declaration that "*draining, lime, and guano dry up all vegetation.*" And, if we are not much mistaken, we will show, on high authority, that the money of the State of New York might be better employed, for the benefit of agriculture, than in publishing such opinions, to be distributed in the name of the American Institute, as premiums to promote excellence in that most important of all industrial pursuits. Nay, we will even venture to anticipate showing, on most reliable authority, that, *as applied to the State of New York*, "*draining*" has been considered not only one of the most important means of improvement yet discovered, but that it may even be relied upon, strange as it may seem to some minds, as a happy means, during summer drought, of affording not "*hard*" but soft "*consolation*" to "*flocks lowing* for drink," and we suppose we may add, with equal propriety of expression, to *herds bleating* for the same consolation.

After all, we can hardly banish the suspicion that this high official anathema against *draining, lime, and guano*, was but a rhetorical expedient—a *ruse* of the orator to divert the minds of his audience, then listening to the sixth oration on that single occasion, all published by the State, to be distributed, not by the State's Agricultural Society, but in the name of the American Institute! May he not have thrown in these agricultural paradoxes, as the great English dramatist was wont to relieve his bloodiest tragedies, by the introduction of light and comical characters? Thus in King John we have the bastard Falconbridge; the witches in Macbeth; in Hamlet, Polonius and the grave-diggers; and in Othello, the follies of Roderigo, &c.

We shall see in our next what is said of the virtue of draining, lime, and guano, in the State of New York, by gentlemen who loom largely in the proceedings and in the estimation of the Institute, as well as of others who deservedly stand high in public confidence on every account. We are not of the category of those who think it right, because it may be most politic, to contradict no body and to criticise nothing that is said. We even deem it, in fact, most truly respectful towards those who utter them, to combat what we believe to be pernicious errors; and the more weighty the character, and the higher the position of the author, the greater the obligation to expose what we look upon not merely as fallacious, but mischievous and hurtful to the great interest of which we hold ourselves to be a sincere but most humble advocate.

Nor, it may be added, do we feel ourselves any the less called upon to contest the validity of this official repudiation of *draining*, as applicable to New York, that it was a flat contradiction and derision of an opinion we had expressed, as published by the New York Farmers' Club, (somewhat at random, it is true, as to the extent,) that, in the State of New York, there is more land which might be profitably drained, if the owners had the means, than would equal half the area of the State of Rhode Island. To that opinion, thus contradicted and treated as absurd, we still substantially adhere, and, we shall see what New Yorkers say, whose judgments are admitted to be entitled to some respect.

From "The Mother's Journal."

A MOTHER'S LETTER TO HER DAUGHTER, ON HER SEVENTH BIRTHDAY.

To which is now added, for the "*Plough, the Loom, and the Anvil*," a Postscript from the Grandfather.

"Good morning to you, my little girl; so you have attained the age of six years. Oh, dear! how old you are getting. Well, my love, I most sincerely wish you many happy returns of this long-wished for day; but in order to have one happy day, something must be accomplished. 'What is it, mamma,' do you say? I will tell you. There are two personages that my little Elize frequently invites to stay with her, and as they are very promising, and Elize to them is very yielding, they often make long stays, to the great annoyance of others who are real friends, and would be glad to do any thing that would promote her happiness; but they are so disgusted with the conduct of the other two, and displeased with the preference that my little girl gives them, that I am afraid these, her best friends, will leave her altogether to the prey of those, her professed friends, but really bitter enemies, who wish to make her look old and haggard, and, oh, shocking! No more.

"The names of these persons are Miss Fretful and Miss Self; the former of these I wish you to discard entirely; you have no further need of her services; the latter must remain with you, but I wish you to keep her in her proper sphere.—You must master her, or she will master you; and if you allow her to have the upper hand, you may not expect any more happy birthdays.

"The friends whom you would do well to encourage, are Miss Good-nature and Miss Cheerfulness; these will always remain with you if properly treated and encouraged; but if slighted they will retire; yet so obliging and kind are they that they are always ready to return on the slightest invitation. One word more, my child, and I have done. Make the Bible your constant study and delight, and follow the example of that Mary, who sat at the Master's feet. That you may be made the subject of His grace, and honour Him, living and dying, prays your affectionate mother."

Just as the good mother had finished the above, and, with a smile of maternal love and satisfaction at the thought of what the daughter would say to it, was about folding it for the mail, Grandfather T. happened to come in, and having read it with every sign of approval, took up the pen to add a postscript—(a rare omission, it must be allowed, in a lady's letter;) and thus the old

gentleman prolonged the letter of advice to his little grand-daughter:

"P. S.—Being allowed, my dear grand-daughter, to fill a blank page in your mother's letter, let me also advise you that there are several other companions with whom I would recommend you to cultivate a friendly acquaintance—to some it will answer as well to introduce you at a more advanced age, and of that, God willing, I shall be mindful: for the present, let me name two, for whom you have already indicated a predilection, and from whom I trust never to see you separated. The name of one is Miss Modesty, sometimes mistaken for a near relative called Diffidence, but, on closer acquaintance, found to be not exactly the same. The other young lady whose companionship I would have you cultivate with earnestness, bears the name of Miss Neatness. These maidens are twin sisters, and never quarrel about any thing. Miss Neatness is sometimes confounded with one to whom she bears no resemblance or affinity, called *Finery*.—I would have you carefully distinguish between the two; for although there may be nothing positively objectionable to Miss Finery of herself, when Miss Neatness is present, yet, in her absence, she always becomes disagreeable, if not disgusting. But to return, more exclusively, to the two young ladies whom I commend to you as your inseparable companions. Miss Modesty you will see shrink instinctively from every thing that is indelicate or unseemly, in thought, word, or deed; and shun, in a way to forbid all approach to intimacy, (and as far as possible, all associations with) companions, young or old, who are not of her own feeling and disposition. Far from using herself, even in moments of relaxation and retirement, in the company of her own sex, words of double meaning, that may admit of immoral construction, even allusions the least unchaste or indelicate affront her sense of propriety, and teach her to avoid all familiar intercourse with those who indulge in them. You will never see her, even in forgetful playfulness, with her most intimate companions, commit any unseemly exposure of her person; and still she is full of animation and gaiety; but well does Miss Modesty know how to distinguish gaiety of temper from freedom and

licentiousness of manner and conversation. Let me advise you, then, to cultivate and live with her on terms of constant intimacy. Let your admiration of her be not a matter of policy, but become a part of your nature.

"Miss Modesty and Miss Neatness, as I before said, are twin sisters. For the latter, too, it has gratified me to see that you have already evinced a decided partiality. Unlike her for whom she is sometimes taken—Miss Finery—Neatness ever looks clean and stainless, even though she be habited in the cheapest materials of woman's dress. You will see her hair always nicely combed, and her shoes, stockings, handkerchief, dress, and all, as clean as clean can be. Night or day, sleeping or waking, she is ever prepared to undergo the test to which the celebrated John Randolph once told me he subjected every man when he wanted to know if he was a gentleman in his habits. 'In such case,' said he, 'I always look at his *finger nails*: if they are unclean, I go no further in my inquiries on that point.' Now, although that may be a test somewhat too hard for all gentlemen in the country, it is one to which every young lady should be willing to submit. As for being caught even in her breakfast-table *deshabille*, with her hair uncombed, her shoes slipshod, a hole in or a speck on her stocking, or a soiled 'kerchief or apron, the very thought of such a thing would do violence alike to

her habits, and to what I may almost call her innate sense of what is becoming. Thus, my dear little grand-daughter, dismissing at once, according to the judicious advice of your ever-vigilant and affectionate mother, that ugly companion, Miss Fretful, who has been sometimes seen in your company, and holding Miss Self under strict check and control, both of whom are too apt to contract an intimacy with the children in the nursery, and to follow them for years, if not for life, after they leave it—just as the brightest and purest steel will contract rust when neglected—following your dear mother's advice in these respects, and seeking always the society of Misses Modesty and Neatness, (and some others, who shall be described hereafter, and whom it is time enough to know when you are more advanced in life,) I shall feel well assured of your safety. With the prudence and piety of your mother and grandmothers to guide, and your father's knowledge and fine sense of honour to instruct you, you will enjoy every chance that can be reasonably hoped for, to go, under the blessing of Providence, through life, with honour and happiness. Finally, my dear grand-daughter, let me exhort you to live and to act constantly as if your great ambition were to have Truth come along with her immortal pencil to write on your tombstone, '*Many daughters have done virtuously, but thou excellest them all.*'"
"July 24, 1849. T."

A MODEL WOMAN.

WE have many accounts of model machines, but here is a model woman. She need not be ashamed to see her name in print, and it ought to be known. It takes from the account all air of romance, and sobers it down to the reality of life, making the example more practical and effectual. However, there can be no doubt of the truth of the narrative. It is one of Mr. Samuel Allen's rough notes by the way, that serve to enrich the pages of "The American Agriculturist."

The account does not say how much the farmer's wife in the country borrowed from the husband owner in town, at the "first go off," until his farm was sufficiently improved to support itself:—

"I learned from a gentleman and his lady, in New Jersey, where I stopped to spend a short time last summer, the following interesting fact:—While doing business in the city of New York, in 1836, said he,

'my wife said to me, one day, instead of travelling in the summer, why not buy a farm, and let me cultivate it, and you come out when your business will permit?' He took her at her word, bought a farm of 140 acres, and moved upon it. It being entirely exhausted, not yielding hay sufficient to keep a horse and cow, he commenced making manure by hauling muck and other material into the barn-yard, sowed oats, buckwheat, and clover, in separate fields, and ploughed them under. He then spread lime upon some fields, and potash upon others, until his crop of grass was sufficient to keep a good stock of cows, and a team sufficient for the purposes of the farm. This enabled him to enrich his land, still keeping up the mucking system, of collecting every other material calculated to augment the quantity and absorb the liquid of the stable and barn-yard—poudrette, bone-dust, and guano, not being in use at that time.

He did not boast of having raised so large crops as some of your subscribers; but that they were respectably so, is evident, as he raised upwards of 1300 bushels of ears of corn from 15 acres, in a single year.

"In 1844, eight years after purchasing this farm, his grass brought standing, in the field, in the month of June, from \$12.50 to \$18.75 per acre, and the farm sold for more than one-third over its original cost, with very little improvement either in fences or buildings. The price of land, however, was considerably lower than at the time he purchased, the advance being wholly in consideration of the high state of cultivation of the soil.

"Much of the success in this farming operation may be attributed to the management of the good lady, in the absence of her husband. The way she served out the corned beef, bacon, and greens, to the hired men, cannot find a parallel. Her father was a wealthy merchant, in Philadelphia, and owned a farm in the neighbourhood. After leaving her boarding-school, she went with the family to spend the summer, at the farm, where she found a woman highly recommended who had been engaged to make the butter for the season. On going down to the milk-house, a quarter of a mile from the dwelling, she there found the milk-room literally sprinkled with cream, and the churn and milk-pans musty. She ran back to the house, just in time to see her father before he started for Philadelphia, and said to him, as he was getting into his carriage, "This

butter-maker will never do for us. Just come down and see for yourself." Down he went, and on beholding the condition of his dairy, his ire was kindled, and he said, "My dear child, what shall we do?" "Why," said the daughter, "take the woman into the carriage back to the city, and let me make the butter." The action followed the word. With a coloured boy to do the churning, and a little girl to assist, she made from June to the first of October, upwards of 900 pounds of butter, which was sold as fast as made, at a store in the neighbourhood, at 25 cents per pound, besides using milk, butter, and cream, in the family, and occasionally sending a roll to a friend. There were nine cows, one of which was farrow and another a two-year-old heifer. Had there not been something attractive about this spring-house, this young lady would never have had her attention directed to making butter. Suffice it to say, it was a stone building, in which was a spring of cold water, pouring into a stone trough, well cemented, and turning round three sides of the room, wherein the pans were set for raising the cream. Near by, was a wooden building with a copper boiler and every convenience for cleaning pails, pans, churn, &c., under an immense large black oak, with its broad dark-green leaves overshadowing the whole, and keeping the atmosphere cool in the hottest days of summer.

"SAMUEL ALLEN.

"Morristown, N. J., May, 1849."

THE MOLE.

Tread softly, that the blind mole may not
Hear a foot fall, we now are near his cell.—SHAKS.

THE mole-hills which we see in the fields and meadows are thrown up by the mole, probably during its search for food. Little was known of the natural history of this animal, till a French naturalist, M. St.-Hilaire, published lately some interesting particulars respecting it. The mole forms several underground passages; and the way she proceeds in doing this is as follows:—she first makes a *run* in various directions, by undermining the ground, and unites this and several others at one point, making, however, some of them larger than the others. M. St.-Hilaire says that she finishes by arranging them with the most perfect symmetry, plastering the sides with great care; and when completed, it may be called her *encampment*. In the centre of these works she establishes herself, and appropriates a separate place to the reception of her young,

which is in some respects differently constructed from her own. In order to render the respective habitations which she and her young occupy not liable to be injured by the rain, she makes them almost even with the ground, and higher up than the runs, which serve as drains, or channels, to carry off the water. She makes choice of the place of her abode with the greatest care, sometimes constructing it at the foot of a wall, or near a hedge or a tree, where it has the less chance of being broken in. This abode is sometimes protected by having a quantity of earth thrown over it, especially in light soils, where I have seen a mound almost large enough to fill a wheelbarrow. Sometimes, however, no earth is thrown up over the habitation. This precaution of the mole is very necessary, to prevent the places she has chosen for retreats for herself and her young from being trampled in. When a mole has occasion to make her run through

a gateway, I have observed that she generally carries it as near as possible to the gate-post, where it is less likely to be injured. Some runs are so near the surface, that I have seen the ground crack during the animal's progress in working them. The bed for the young is composed of the blades of wheat, with which the mole forms a sort of mattress. Four hundred and two of them were counted in one nest, and all so fresh in their appearance, that they had been probably collected by this little animal in the course of two or three days. This shows not only her extraordinary industry, but the great depredation she must commit.

The mole is never known to work for food near the place which she has fixed upon for her abode. She labours to procure it about two hours in the morning, and as many in the evening, and then returns to her home or resting-place, which is so constructed that she is instantly made aware of any danger. This effect is produced by forming the upper runs in a sort of circle, so as to communicate a vibration when any thing passes over them. The mole then takes alarm, and escapes by one of her *safety* runs.

The mole is not often seen on the surface of the earth. I once, however, caught one, and turned it loose upon a lawn, the turf of which was on a bed of strong gravel, and particularly hard and dry. Notwithstanding these disadvantages, the mole contrived to bury itself almost in an instant, working into the earth by means of her snout and fins (for they can hardly be called feet) so fast that the ground seemed to yield to her mere pressure.

The power of smelling in the mole is very acute; and it is supposed that this sense serves to direct her in the search of her food. She hunts after beetles and worms, which last she pursues eagerly, but not always successfully; for the earth-worm is aware of its danger, and quick in escaping from it. Her search for prey taking place in the morning and evening, when birds are more generally feeding, must be the means of contributing greatly to their subsistence by driving worms to the surface of the earth, and furnishes another striking proof that the "fowls of the air" have their food provided by an almighty and superintending Providence in a variety of ways.

Le Court, who assisted M. St-Hilaire in his observations, and who appears to have been a sort of philosophical mole-catcher, was surprised when the naturalist expressed a doubt as to the mole seeing. He informed him that, in swimming rivers, they habitually guide themselves by their sight; but, in order to satisfy M. St-Hilaire on this

point, he contrived the following experiment with him:—They made two openings in a dry tiled drain, at one of which several moles were successively introduced. Le Court took his stand at the other. If he stood quite still, the mole soon came out and escaped; but if, at the moment in which she showed herself at the hole, he moved only his thumb, she stopped and turned back. By repeating this as often as she re-appeared, the mole was kept imprisoned in the drain.

There has been a very general idea amongst our mole-catchers, that if the smallest drop of blood is taken from a mole, it occasions instant death. Le Court seems to account for this opinion in speaking of the fights which take place between the male moles, by saying, that if one is ever so slightly wounded in a vein near the ear, the wound is mortal.

In order to ascertain the rate at which a mole moved, he put in practice the following curious experiment:—He placed some slight sticks, with little flags at the top of them, in the run of a mole, which he had previously ascertained to be of considerable length, and along which the mole passed and repassed four times a day in search of food. These sticks were placed at certain intervals in the run, so that if the mole touched them, the flag would instantly show it. He then introduced a horn at one extremity of the run, and blowing it loudly, frightened the animal; and she then went along the run at such a rate, moving the flags in her passage, that Le Court and his friends, who were stationed at intervals to assist in the observation, considered that she went as fast as a horse could trot at its greatest speed.

Hunger in the mole is thought to be a more violent feeling than fear; and its appetite is singularly voracious. If it sees a bird near, it quits its hole—approaches as if to attack it; and if the bird pecks it, the mole retires towards its hole, and tempts the bird to follow. She then watches her opportunity—darts upon it—seizes it by the belly, which she tears open, assisting herself for this purpose with her *flaps*, and, thrusting her head into it, devours it. She drinks as greedily as she eats. The mole does not, like the mouse, lay up a store of food, but preys on worms and various kinds of insects: she will also eat frogs, but will not touch a toad, if ever so hungry. A mole was tried with eggs and oysters, but refused to eat either. They will, however, eat fruit, and, Buffon says, acorns. If two moles are shut up together without food, the strongest will devour the weakest, even to the bones: nothing but the skin is left, which they never

eat, and which, when one has killed the other, is always seen to be ripped up along the belly. It was found that ten or twelve hours was the longest time they could live without food. This fact seems to prove that the mole is not torpid in frosty weather, which Linnæus asserted she was. It is known that, in such seasons, worms, ants, and the larvæ of cockchafers and beetles, penetrate deep into the ground. It is probable, therefore, that the runs of the mole are regulated, as to their depth, by the habits of the grubs on which she feeds. One would suppose, from the texture of its fur, which is particularly short and thick, that this animal is not very susceptible of cold. Its whole formation is admirably adapted to its mode of life.

It has been said that the mole, when the ground which it frequents is flooded, will climb up trees. This, however, I doubt, as I have seen it swim with perfect ease.

I lose no opportunities of conversing with mole-catchers whenever I meet with them in my walks and rides. They are a singular class of men—what may be termed *characters*—with a considerable share of low wit and a sly, cunning look, slow and deliberate in all their movements, and oracular in speech. They acquire a silent and stealthy walk, from the success of their operations depending on their not giving the alarm to the little animal they want to entrap. I also observe that they are generally much bent, from the constant habit they have of stooping to look for the runs of the mole. They are, however, possessed of much acuteness, and a small fee now and then makes them tolerably communicative. The rat-catcher is a very different kind of person. There is frequently an impudent, saucy kind of look about him, which seems to partake of the character of the animal he destroys. His very dogs are afraid of him, and they appear sulky and half-starved. His conversation is generally in praise of his dogs and ferrets, and the number of rats he has destroyed with them. He is a great frequenter of the alehouse, and a great conveyer of scandal from one village to another during the progress of his calling. My friends the mole-catchers, on the contrary, are a quiet and sober race of men, fond of accumulating money, and are seldom to be met with in an alehouse. Their cottages are generally neat and clean, and the implements of their calling tidily bestowed in them, such as two or three spades, a bundle of tough hazels, and some wooden traps. In an evening they may be seen twisting their horsehair nooses, or cutting a hazel stick to its proper length. One of these men showed me, a

short time since, a white, or rather a cream-coloured mole, which he had caught near the Robin Hood Gate in Richmond Park. He told me “there were five of them, but that some *young chaps* had stolen the others.” He had it stuffed, and seemed to set much store upon it. He has since brought me a gray mole, with an orange-coloured belly, and assures me that he once caught one that was perfectly orange, except the head; but it was too much decayed before he took it out of the trap, to be fit for preserving. These variations in the colour of the mole are extraordinary, and I have never yet seen them noticed by any one who has published remarks on this animal. There is a great variety of soil in Richmond Park, but the moles are most abundant in those parts of it which are loamy. Here the moles are invariably black, but others of a different colour have been taken in the wetter and more boggy parts, where there is a substratum of white sand. Whether this circumstance, or the difference in the sort of food in these places, may influence the colour of the mole, I know not.

I observe that when a mole has its run up to the side of a hard gravelled road, it carries it a considerable depth under the road, and then comes nearer the surface immediately on the other side of it. This instinctive property of finding the exact spot where to begin again its usual depth of run is curious, and saves the animal much trouble.

During a particular season the male mole makes what mole-catchers call the rutting-angles. These are much larger than the usual runs, and must cause the animal considerable labour. They are about five inches wide and four inches deep, and are as near the surface as possible. The female goes a month with her young, and has never more than six nor less than two at a birth. The young moles begin to run in about five weeks, and when they first start are about three parts grown. They follow their mother for some time during their search for food, and it would appear that they are not easily induced to quit her. A mole-catcher informed me that he was once taking a female mole out of a trap in which she had been caught some time, and found five young ones clinging about her, none of which made any attempt to escape. One of these men told me that previously to the setting in of winter the mole prepares a sort of basin, forming it in a bed of clay, which will hold about a quart. In this basin a great quantity of worms are deposited, and in order to prevent their escape they are partly mutilated, but not so much as to kill them. On these worms the moles feed during the

winter months.* He also informed me that he finds these basins in less number some years than others, and when this is the case he always knows that the winter will be a mild one. This circumstance, and the deposit of mutilated worms, shows the powerful instinct which the mole possesses. They are very pugnacious, and at particular seasons four or five males may be seen fighting together on the surface of the earth, having quitted their runs for that purpose. When this is the case, one or two are generally left dead.

That moles were intended to be beneficial to mankind, there can, I think, be no doubt. I have been assured that where old mole-hills are most abundant on sheep pastures, the latter animal is generally in a healthy state, as it feeds on the wild thyme, and other salubrious herbs, which grow on these heaps of earth. Where these have been levelled and cleared away, sheep are not found to thrive as well as they did previously. This fact was confirmed to me by the Ettrick Shepherd, who deprecated the practice of removing mole-hills. On the fine and extensive pastures in Leicestershire, where old mole-hills are extremely abun-

dant, sheep thrive well, and are generally healthy: and I have been assured that after the mole-hills had been destroyed in a park which belonged to the Earl of Essex, in Herefordshire, the deer in it never thrived.

An observant person has assured me, that so great is the punctuality of the mole in commencing its morning and evening movements during the summer months, that he never knew them vary in their time.

It is a curious and extraordinary fact, that moles are nowhere to be found in Ireland. One would think that the soil was particularly well suited for their operations, as I have frequently observed them to be most numerous in boggy soils; at least this was the case in some peat-earth in Staffordshire, where they were exceedingly numerous, and made larger hillocks than I have seen in any other place. Dead birds and mice have sometimes been found in the nest of the mole.

In Herefordshire they are called munts, from their raising perhaps little mounds or hills; and, in Nottinghamshire, &c., *mouldi-warps*,† from the manner in which they use their hand-like fins, warping, or throwing off the mould on each side of them.

GENERAL MAXIMS.

THE principles of virtue should be early instilled into the minds of the young. They should be taught to reverence their parents, respect their superiors, and entertain the most sacred regard for truth. The propriety and the duty, as well as the necessity of regulating their temper and deportment, should also very early be impressed upon their minds, for on this depends much of the comfort of their future lives.

Never receive a favour but what you intend to pay back. In conferring one, do it without desiring a return. Grant with a good grace; and if obliged to refuse, let it be with gentleness and regret.

To judge of things by the event is unjust. When all that reason, prudence, or wisdom suggests, has been done, a man can have no bad reflections, even if he fail of success. Many actions which are censured when they do not succeed, would have been commended, had the result happened to have been the reverse.

It is a true saying that "Pride has ruined thousands, but indolence tens of thousands."

To be happy in the marriage state, it is only necessary that the married couple

should overlook the faults, and study to understand the tempers, of each other.

To live at peace with others, we ought to be consistent with ourselves. And to be consistent with ourselves, we ought to live at peace with others.

They who promise in haste, generally perform at leisure. The making a promise includes an obligation to perform it. To deceive people with illusory pretensions or hope is essentially dishonest: yet there are many who, from a feeling of vanity, are induced to promise what they are never able, and what perhaps they never intend, to fulfil. Better never promise, than promise and never perform.

It requires much tact to proportion your expenditure to your income. Economy is a science, which, if well understood, may lead, on small means, to respectability and even affluence. Keep always in view that you may never recover indiscreet expense, and that extravagance, which is always followed by repentance, is frequently punished by the very want it occasions. Happy is he who can obey the apostle's injunction, to "owe no man any thing."

* This fact seems to disprove the assertion of Idnæus, that the mole passes the winter in a state of torpidity.

† Mouldiwarps is evidently the German word Maulwurf.

All excess is censurable in itself, and because it leads to greater excess. In the eyes of the world, wealth, like charity, covers a multitude of sins, and adds a new lustre to merit. To gain wealth, it is necessary to avoid all useless expense, and to pursue industry, frugality, and economy. Nevertheless, it is not your money that will render you respectable, but the use you make of it.

Strive to be seasonable in all things. Never waste time if you can avoid it; but let every hour be diligently improved. To the poor man, whose bread depends upon his labour, time is invaluable; and the man of genius has often no other estate.

Let your thoughts always be profitably employed, as the means of keeping foolish ideas out of your head.

Let scrupulous attention be paid to the order and arrangement both of your time and avocations. Jeremy Taylor, in his "Holy Living," says—"Avoid idleness, and fill up all the spaces of thy time with severe and useful employment."

To allow all affronts to pass unnoticed would be pusillanimity, and an encouragement to insult, especially from persons of mean ideas, or sordid education, or purse-proud feelings; but to be always squabbling is no proof of courage.

Envious people bring themselves down to the level to which they endeavour to humble others. The most preposterous feature of envy is that the prosperity of those whom they call their friends often excites in envious minds nothing but mortification. "A man's enemies," says an old moralist, "are not always created from his vices, but sometimes from his virtues." Envy of good qualities engenders more ill-will than reprobation of bad.

An error is more easily forgiven than the attempt to justify it by evasive excuses. It is better, surely, candidly to confess one's faults, than be guilty of telling lies to conceal them.

Selfishness or conceit often prevents us from doing justice to ourselves—envy or prejudice, from being willing to acknowledge the merit of others.

All men should do all men justice, without hesitation or scruple.

Lord Chatham, who was almost as remarkable for his manners as for his eloquence and public spirit, has defined good breeding to be—"Benevolence in trifles, or the preference of others to ourselves in the little daily occurrences of life."

"Good manners," says Locke, "are the blossom of good sense, and it may be added, of good feeling too; for, if the law of kindness be written in the heart, it will lead to

that disinterestedness in little as well as great things—that desire to oblige, and attention to the gratification of others, which is the foundation of good manners."

To avoid extravagance, it is not necessary to go to the opposite extreme: mean thrift and profuse expenditure equally betray a narrow and vulgar mind.

Change of fortune to the better often changes manners to the worse.

Ignorant persons, like children, admire most what they cannot comprehend.

An inordinate love of pleasure is the ruin of individuals, as luxury is the bane of civilized society.

The deficiencies of education are not easily remedied. They often, in after-life, cause a change in the disposition or the habits—making gaiety degenerate into dulness, and a social temper have recourse for relief to dissipation.

We ought to be as judicious in our amusements as in our studies. When properly regulated, the former will improve the morals and refine the manners, as the latter have a tendency to enlighten the intellect and inform the mind.

He who is ashamed of his calling is ashamed of that by which he not only procures the means of subsistence, but by which he obtains character and respect. If any man, therefore, should endeavour to cast contempt on your profession, regard it not: the attempt is more disgraceful to him than it is to you.

Lose no opportunity of improving the mind, and cherish a taste for reading, which presents charms of an enduring nature—though to be useful it ought to be diversified. Cultivate the moral and religious sentiments; and, above every mere worldly consideration, possess a scrupulous regard for truth and the higher duties of life.

Never be inquisitive as to the conduct of others, nor be over-suspicious of their motives. It was one of the few good regulations of the celebrated Beau Nash, of Bath, "that all whisperers of lies and scandal be taken for their authors."

One may converse freely with the casual acquaintances he may meet with while travelling; but nobody would dream of making such persons confidants and friends. The journey of life is longer.

People are very apt to imagine they see precisely what they wish to see. In illustration of this willing illusion, a French author tells the following story:—"A country clergyman and a lady went forth to view the moon, having heard that it was inhabited, and were looking for the inhabitants through their telescopes. 'If I am not mistaken,' said the lady, 'I perceive two sha-

dows: they mutually incline towards each other; doubtless they are two happy lovers! 'Oh fie! madam,' said the clergyman, 'these two shadows are two steeples of a cathedral!' On the earth, as in the moon," continues the illustration, "different pas-

sions will cause us to see either lovers or steeples!"

"Do as you ought to do, whatever be the result," is a maxim that ought to be acted upon, under all circumstances, and upon all occasions, without regard to consequences.

THE SQUIRREL.

Dear is my little native vale,
The ring-dove builds and warbles there;
Close by my cot she tells her tale,
To every passing villager:
The squirrel leaps from tree to tree,
And shells his nuts at liberty.—ROGERS.

WHILE fishing in the beautiful grounds of Pain's Hill, near Cobham, I have had frequent opportunities of watching the habits of squirrels, which are there in great numbers. These amusing animals generally make their nests on the branch of a tree, and appear to give the preference to the fir. In forming the nest, they begin by gathering mouthfuls of dry bent grass, in the way we see rabbits do, and of this grass they make a considerable deposit. The outside is afterwards protected with a quantity of sticks, giving the nest, or *drey*, as it is called, the appearance of a bird's nest. When the young are ready to be deposited, the female squirrel scratches off her fur in the manner of the rabbit, so that its stomach is sometimes quite bare. This circumstance however enables the helpless young to find the teats more readily, thus answering a double purpose, affording them at the same time warmth, and removing the obstruction to their receiving nourishment. The squirrel has from four to five young ones. These when very young, have an odd appearance, in consequence of the shortness of their tails, which do not arrive at the full size for some time. The young ones are easily reared, and soon learn to take milk out of a spoon, and become very tame and familiar. In a wild state the female shows considerable coyness, and when pursued by the male will drop from great heights from one branch to another. They make deposits of food, chiefly acorns, in holes of

trees. I never, however, could hear of a drey having been found in such a situation, but generally on the branches, where I saw several about half-way up the tree. I have, however, seen one on the very top of a young fir tree. Squirrels vary in colour, some having more white about them than others, and sometimes the tail is gray.

They are much delighted with the fruit of coniferous trees, such as the pine, the fir, the larch. They also feed on the birch, and probably the alder. They not only devour the cones of the Scotch fir, but also bark large boughs, and gnaw off the tops of the leading shoots, so that the trees are much injured by these mischievous little quadrupeds, which are too subtle and too active to be easily taken or destroyed. They feed also on small birds. In cutting down some trees on an estate at Petersham, the axe was applied to the root of a tall tree, on the top of which was a squirrel's nest, and a rope was fastened to the tree for the purpose of pulling it down more expeditiously. The workmen cut at the roots, the rope was pulled, the tree swayed backwards and forwards and at last fell. During all these operations a female squirrel never attempted to desert her new-born young, but remained with them in the nest. When the tree fell down, she was thrown out of her nest, was secured unhurt, and put into a cage with her young ones. She suckled them for a short time, but refused to eat. Her maternal affection, however, remained to the last moment of her life, and she died in the act of affording all the nourishment in her power to her offspring.

Recipe for potting Charr and Trout.—(We doubt not it would answer well for herring.)

The following are the ingredients required in order to pot 8 pounds of fish:—

3	teaspoons full of ground black pepper	
3	"	Allspice
2	"	Mace
1	"	Cloves
1	"	Nutmeg
$\frac{1}{2}$	"	Cayenne

Keep these carefully corked up in a small phial, and add, when employing them, a little salt. Cut open the fish and clean well

with a dry cloth. Remove the heads, tails, and fins, along with the back bones. This done, apply the mixture, transferring them, as you do so, to a baking dish. Cover well with fresh butter, and place the dish in a slow oven, allowing it to remain there until the bones of the fish become dissolved; drain off the butter over them. Trout treated in this manner ought to be sea-fleshed and not to exceed three quarters of a pound in weight. If well selected and in good season, they will be found not a whit inferior to the best charr.

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We have now had experience enough to know how difficult it is to diffuse a general knowledge—even of the *existence* of works of *universal utility*. This *Elements of Agriculture*, is one of the books, brought by Mr. Vattermare, under his system of exchanges. It has been lately constructed in France, and printed by the order of government for all country schools. Mr. Randall, long in the joint superintendence of the common schools in New York, pronounces it *the work* that is needed for all boys in the country. The price is but 25 cents, and yet it don't go off. We have no interest in it, but, if we had the means, we would place it in every school in this Union.

From the Daily Chronicle, Cincinnati.

A NEW BOOK.

ELEMENTS OF AGRICULTURE, FOR THE USE OF PRIMARY AND SECONDARY SCHOOLS: Translated from the French, by F. G. Skinner.

Of the mass of "new books" that are strewn over the field of literature, these are really worthy to be garnered up which tend to render popular the elements of useful science. Such is the character of the book under review.

In this country, we have been too much disposed to degrade agriculture below the level of science. Long training and study are deemed necessary to make the lawyer, physician, and merchant, and in none of the mechanic trades is a man esteemed fit for his calling until he has served a long apprenticeship. In agriculture, alone, it is considered unnecessary that there should be any previous training or preparatory education. "Arator nascitur," would seem to be the American idea as to the art of tillage. Is not this a great error, and one of the principal reasons why agriculture is prosecuted with so little profit among us? Ought the youth of our country, the greater part of whom are destined for the agricultural life, to grow up without any instruction in reference to their future pursuit?

In France, and other countries of Europe, schools have been established for the purpose of teaching the elements of agriculture, as a part of scholastic education. This book was written for the use of the French schools, and we are indebted to Mr. Skinner for the translation of it into the English language.

It is a book which might be introduced into the primary schools of our country with great advantage; and that State would earn an enviable reputation, which should set the example of instructing its youth in the "Elements of Agriculture." We should have better farmers and more liberal-minded people, if more of the principles of natural-science were acquired in our schools. While this book is adapted to the use of schools, it contains a great deal of information which the most experienced farmer need not be "ashamed to know." It comprises, within a very small compass, and for the *very low price of twenty-five cents*, many important truths with regard to the character of different soils, and the proper modes of cultivation and improvement; and we do not hesitate to express the opinion, that no practical farmer ought to be without this book, or an equally good one.

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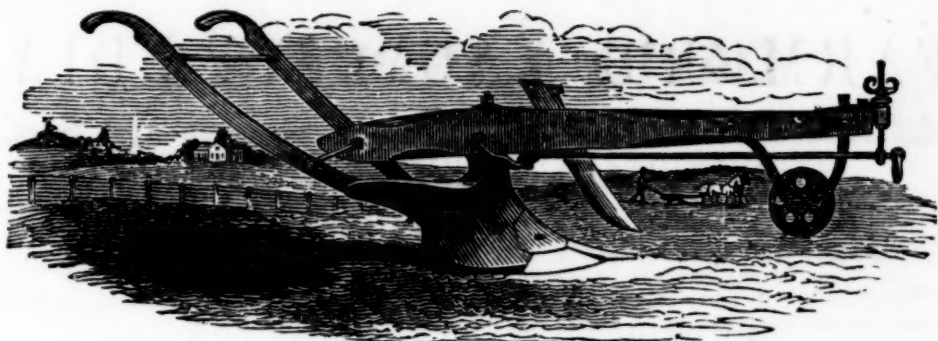
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AARON CLEMENT.

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Mr. M. P. Parish is our Agent for The Plough, the Loom, and the Anvil, for the New England States. All orders for this work, except for present subscribers, at Providence, Rhode Island, and all remittances for the same, from those States, should be directed to him—his address is, 23 Cornhill, BOSTON.

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BY GOUVERNEUR EMERSON.

An imported copy of the English edition of this work, in one volume, would cost about \$14, and then not have a single one of the 17 plates added to the American edition, which costs only \$4, nor contain about forty per cent. of matter relating to the great American staple crops, with descriptions of all the American forest trees, native plants, destructive insects, etc. etc. This shows the great advantage the American has over the European purchaser; our countrymen, desirous of improving themselves, being able to procure, at a comparatively small price, this standard work, filled with the latest and best information relating to practical farming, and all the interesting concerns of country life.

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✂ The first volume of The Plough, the Loom, and the Anvil, may be had at the Office, 81 Dock Street, up stairs, opposite the Post-Office.

Subscribers who have received the first volume or year in Numbers, can have them bound, plain or fancy, on the best terms, by Ducomb and Collins.

THE AGRICULTURAL ADVERTISER.

OCTOBER 1, 1849.

THE AGRICULTURAL ADVERTISER

May be considered a sort of appendage to "*The Plough, the Loom, and the Anvil*"—somewhat like a tail to a kite; and if there be, which is not likely, among our readers, any one so idle and so curious that, to him, it may be a matter of some interest to know why it is that so young a body should thus be already branching off a tail, like a tadpole turning into a frog; why, such unoccupied and inquisitive person is most respectfully referred to the following correspondence:—

OFFICE OF THE PLOUGH, THE LOOM, AND THE ANVIL, }
79 Walnut Street, Philadelphia, 19th September, 1849. }

Sir:—I send herewith a number of "*The Plough, the Loom, and the Anvil*," being advised to do so by the postmaster of this city, who feels himself called upon to exact from me postage on all *newspapers* sent in exchange for my Journal above named, while no such exaction is made from the proprietors of any one of the many other Agricultural Journals, printed monthly, in the *same form*, and dedicated to the *same objects*—differing essentially, as I understand, only in this (if that be essential), that mine, being of a volume to yield to the Department double as much postage as they do, makes it, on that account, necessary that the sheets should be *stitched together*! Will you please let me know if that, or what else may be the ground of the heavy tax I am required to pay, or to refuse the courtesy of an exchange with very many papers, very good in their way, but really of no value to me, except in the kind testimony they bear to the usefulness of labors for the benefit of the landed interest, continued now, without interruption, for more than thirty years—endeavoring, *con amore*, during all that time, to teach others how to make bread, and seeking now, with difficulty, to make it for myself? Respectfully, your obedient servant,

J. S. SKINNER.

To the Hon. JACOB COLLAMER, }
Postmaster-General, Washington. }

POST OFFICE DEPARTMENT, }
Appointment Office, September 20th, 1849. }

Sir:—Yours of yesterday is at hand. The law authorizing a free exchange between printers of *newspapers*, does not extend to publishers of *magazines* and pamphlets.

Please call upon the postmaster of your place, and examine the 29th section of the act of 1825, and the 284th and 286th standing instructions of the Department, predicated upon said act. I am, very respectfully, your obedient servant,

FITZ HENRY WARREN,
2d Ass't P. M.

Hon. JOHN S. SKINNER, Philadelphia, Pa.

Law has been defined to be a "rule of civil conduct prescribed by the supreme power of the State," to which Blackstone has superfluously added, "commanding what is right, and prohibiting what is wrong"—superfluous, because being *so* prescribed by *such* a power, it is that which *makes* it right or wrong—sometimes, as we think in this case, without reference to the essence of the thing to which it is applied, and to the reason of the law itself.

If deemed a magazine because it is *stitched*, what is there in the letter of the law, or in the name of reason, that stitching, merely, should convert that, composed in all else of the same essence and materials, into a magazine, which would otherwise be treated as a newspaper?

Nevertheless, it seems to be the law, as enforced against *this* agricultural periodical only, whether just or not, and so we must obey.—"And lawfully this Jew may claim a pound of flesh."

As the Spectator says of Tom Touchy, Uncle Sam "is a fellow famous for *taking the law* of everybody," though he never allows it to be taken of himself. Hence we are driven to one of those small contrivances by which better men often manage to whip the devil around the stump; and, accordingly,

☞ We hereby request all proprietors of journals who now send theirs in exchange for *The Plough, the Loom, and the Anvil*—and for which our postage was beginning to run up into the \$ hundreds—to direct their "packers" to address them in future to the "*AGRICULTURAL ADVERTISER*, Philadelphia." ☞

Now, as in these town-places a man has to "*pony the dust*" for everything he gets done, and almost for everything he looks at, and as the publication of the "*Agricultural Advertiser*" will involve an expense not without consideration, "circumstanced as we are"—as the lamented and inimitable Power used to say in the play—it behooves us to see how we can

turn it to the best account. Accordingly, as the best account to which anything in this life can be turned is, when it is made pleasing or useful to the ladies, we think we shall transfer to it their department—consisting, as heretofore, of **READINGS FOR MOTHERS AND CHILDREN**. Perhaps it will be more convenient than to be looking for such readings where they might come across things relating to horses, and bulls, and boars. Moreover, this tail to the kite may prove a convenience to ourselves, as it may go to the press the later for not being previously stereotyped, as the kite itself is. It will thus afford us an opportunity to throw in many odds and ends, worth preserving, just as a lady's work-basket is kept at hand to receive many little shreds and patches, too good to be thrown away, and that otherwise might be lost, such as we, and all who have an eye to such things, sometimes see worked up into beautiful patch-quilts, or other useful purposes.

Above all, this *Agricultural Advertiser* is intended to serve as a receptacle or medium for *advertisements of every kind*, that have *any relation to agriculture, manufactures, or mechanics*, serving, in that way, as a most eligible medium for those who may desire to disseminate, rather widely than locally, a notice of the existence and uses of their establishments, their business, and of whatever they may have to buy or to sell, in any way appertaining to land, and to industrial and productive industry. We shall continue to send the Plough, the Loom, and the Anvil to our brethren of the press—asking the favor of those who may believe the tendency of our labors to be useful to the country, to give them a monthly notice, by the insertion of our *table of contents*—or otherwise, in such form and terms as they may think they deserve—as will, in their judgment, be useful to the cause; at the same time that they will be giving a lift to one of their oldest fellow-laborers, following this now, as his only means of making for himself that which, all his life, he has been endeavoring to teach others how to make—*bread!* To the same purpose he expects to devote, with ever increasing earnestness, the residue of his life—off the parish as long as health and industry can keep him off—but from the asylum for the poor, if driven there, will he wield his pen, while he can hold it, for the benefit of those who follow at the plough—and for whose sake he would draw close around the Plough and the Harrow, the Loom and the Anvil.

HOW THIS PLOUGH RUNS.

For once we give the names of subscribers, for two months, just to show to patrons and correspondents who are their associates and fellow readers. Most new subscribers prefer to go back and take the work from its commencement, so as to have it all complete; in that case, \$5 pay for two years, and they get the first volume bound in paper, in a style to allow it to go lawfully, by mail, along with a copy either of the "Elements of Agriculture," or of the "Cow-book," at the option of the subscriber. So, too, a copy of either will be sent to any one making up a *club of five subscribers*. Where such a *club*, or individuals of it, choose to take from the beginning, the price is \$4 for the two years. The reader may be assured that the accounts of the healthy vegetation and growth of the seed we are sowing, which usually accompany new subscriptions, are more gratifying to all except the pocket nerve, than the subscription itself. Being sincere in its propagation, it cannot but be satisfactory to learn that our doctrine is *working* like the leaven which the woman threw into the three measures of meal. Though, here and there, the countenance of some old and valued friend is withdrawn from us, even among the learned *doctors*, whose "ears are dull of hearing and their eyes they have closed," yet every day brings irrefragable proof that the mass of the people is becoming indoctrinated with the true faith.

Right proud are we, be it admitted, to have a *lady's* name at the head of our list, and a good name, too, on more accounts than one. We want to go on getting not less than 100 new subscribers a month, to the end of this year, and then we shall feel safe on the score of bread—for, be it remembered that we have to earn and pay away at least \$300 a month, before we can keep enough to leave a loaf for Belisarius. In no case, however, shall we relax in our efforts to be useful to that great concern of every country; which none dare undervalue or abuse except those who abuse what feeds them—as vermin breed and feed in the Lion's mane. This list is besides subscribers obtained by regular agents.

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PROGRESS OF PUBLIC OPINION IN THE OLD DOMINION.

WE have unaffected pleasure in seeing, as a sign of the run of public sentiment in the good old "Dominion," that the Agricultural Society of Brooke and of Ohio County has decreed a large number of "*The Plough, the Loom, and the Anvil*," to be distributed as premiums for excellence in various departments of Agricultural industry. Will our "exchange" brethren please notice the fact, as indicative of the transition which, we can assure them, is going on in all the Southern and Southwestern States, in favor of forcing the lighter machine, the Loom, to come to the cotton, instead of sending the cotton to the Loom. The good people of Alabama are beginning, we see, to think it would be quite as reasonable in principle, though it may be not quite so troublesome, to send their *pine trees* abroad to have the rosin extracted, as to send the rosin to have the turpentine distilled out of it. They begin to think that, as the mill is everywhere, placed as near and convenient as possible to the bulk of the wheat and the corn; so too, it would be well to place the forge and the foundry near to the coal and the ore—and the factory near to the wool—instead of importing wheat and wool from England in the form of cloth and iron, as we used to import saddles and bricks before the Revolution. These are, as we now believe, the great questions which lie at the bottom of all inquiries into the means of a *general amelioration of agriculture* in this country; and if we do not make our doctrine clear before we are done with them, to those who *will read* "*The Plough, the Loom, and the Anvil*," of whatever party they may be, we will agree that prejudice is stronger than truth—that darkness has the power to reveal what light cannot disclose.

For the "Agricultural Advertiser."

PENNSYLVANIA HORTICULTURAL SOCIETY.

Philadelphia, Sept. 20, 1849.

This Society held its annual exhibition on the 12th, 13th, and 14th days of the present month. It was one of the finest displays that has ever been witnessed in this city, or any other in the Union. There was brilliance enough in the daytime to charm one. But at night, when fully illuminated, the splendor was enchanting. Having entered the spacious hall, you would find yourself amid exotics, that would almost convince you that you had been translated to the forest of the Indian Isles. There was everything around that would intoxicate the whole five senses. The orange, lemon acacia, balsam magnolia, and hundreds of other large specimens of foreign trees; and from that down to all manner of flowering plants, beautifully fashioned into the most tempting bouquets by fair fingers, "posies of sweet gilly flowers," as the old poet says, "greenly growing," and in full bloom, surrounded one on every side. And then the fruit—it seemed to have been grown for some such occasion, it was so superior to what we are accustomed to see. It really needed no Eve, or the statue which Pat saw, to tempt one to bite those peaches and pears, not to mention *apples*. And there were "some pumpkins" there too; these could not be beaten anywhere, unless in "*our town*" down East. Everything was No. 1, except a "*crook-neck*," and that was more so. It really beat the *monster* that hung a whole year in "our kitchen." In fact, we thought *Pomona* had lost the bottom out of her "horn of plenty," and scattered the contents in grand profusion about the halls, which the fair genii of the place had gathered tastefully in their order. There were some splendid specimens of cut flower work in the shape of temples, pyramids, and graperies, &c. &c., which did great credit both to the patience and skill of the artists. The fountain added much to the beauty of the whole. We cannot specify any further, but would give a general invitation to everybody to visit the scene of exhibition next year; nor let anybody or anything keep them from it, that they may see for themselves, and judge what American labor, taste, and skill are doing in the Keystone State. In great haste, yours,

H. P. C.

FRANKLIN, Williamson County, Tennessee, }
August, 1849. }

Dear Sir:—I am anxious to get a dairyman and his family to come out to Tennessee to take charge of a dairy—cheese and butter making, connected with a nursery and whatever else he chooses, or can connect—say some sheep, and gardening.

To a competent man, I would give a liberal share of the whole business.

Can such be had? Will they come here? Why should we not, in Tennessee, make as good cheese as in Goshen, or anywhere? The nursery business is profitable, and may be made very much so, by attention and good capacity. The location is about 16 miles from Nashville, and about 5 miles from Franklin; turnpike roads now being made to both places. Very healthy. Grasses do well here. I would like to get into correspondence with any one who would be competent to manage this business, that we might confer together on the particulars and minutiae of the whole thing.

We have an orchard of some 200 old or grown trees. I can furnish, say 25 cows to begin with; some 100 head of sheep; three to four hundred acres of woods pasturage, pretty good grass; with say 50 to 75 acres of good cleared land (or more, if profitable), with some two hands (a man and woman to assist), and horses sufficient to do the hauling. We together to furnish the apparatus; and I would give a competent, honest, and industrious man and wife half the profits on all these things that he could make off of them. A man and wife are mentioned, because a man of family is preferable; a single man would not become so settled or satisfied among strangers.

I address this to you, not knowing any one so probably acquainted with persons of this branch of business; and to request you to put it into the hands of such person as you may deem suitable to answer the demand, and likely to come.

I presume about Germantown, or in New Jersey, or Delaware, there are many nurserymen well known in the Philadelphia market. But do they understand cheese-making like the New York dairymen? or even Ohio dairymen? And you may send this to any place or person you may think of as the best. I shall be glad to have an early answer.

Respectfully, LELAND J. BRADLEY.

To J. S. SKINNER, Esq., Philadelphia.

AGRICULTURAL EXHIBITION.

THE Philadelphia Society for Promoting Agriculture will hold their Annual Exhibition and Cattle Show at the Lamb Tavern, on the Lancaster turnpike road, one mile from the Schuylkill Permanent Bridge, on Thursday and Friday the 4th and 5th of October. All animals, implements, and articles, exhibited for premium, must be ready for inspection by the judges early in the forenoon of the first day. The trial of ploughs and ploughing will come off on Friday the second day, at 10 o'clock; after which an address will be delivered by the Hon. Joseph R. Ingersoll, on the conclusion of which the premiums will be announced, as awarded by the judges.

AARON CLEMENT, *Rec. Secretary.*

Philadelphia, September 17, 1849.

AGRICULTURAL EXHIBITION.

The Third Annual Exhibition of the Burlington County Agricultural Society will be held at Mount Holly, N. J., on the 10th of October next.

☞ The Prince George's (Md.) Agricultural Society is to hold its Fair on the 31st of October and 1st of November; but, as that time had previously been fixed on for the Charles County Fair at Port Tobacco, it is proposed, as we see in friend Wilson's Marlboro' Gazette, to change the time of the first named Fair to the 25th of October, and it seems probable it will be done.

☞ New Castle County (Del.) Agricultural Society. What are our friends about there that they have not advised us of their next meeting?

FRANKLIN INSTITUTE EXHIBITION.

"The Franklin Institute will hold an Exhibition of American Manufactures in October next, in the City of Philadelphia. The rooms will be prepared for the reception of Goods on Friday, the 12th, and opened for the admission of visitors on Tuesday, the 16th, at 10 o'clock, A. M. No goods can be entered on the Judges' invoice, for competition, that are deposited after Monday evening, the 15th."

It will not deserve or receive the less countenance from true patriots and men of real science, that it does not beat the drum—play the fife—advertise its "pyrotechnics," and its "aquatics," and puff, puff, puff;—caring little about who comes or what comes, so it can gather up the "siller."


THE HORTICULTURAL EXHIBITION,

Which serves annually to display, at Princeton, the highly cultivated and fine taste of the good people of that and the neighboring towns, Trenton, Burlington, Hightstown, and others in New Jersey, came off on the 19th, 20th, and 21st ult. The society was fortunate in having Prof. Mapes for the orator of the day, and we esteemed ourselves lucky in being able to seize upon the day of his lecture to take a look at everything, and to taste some of the best. It is not alone that the Professor has a vast fund of knowledge; his happy way of communicating what he pleases to his hearers is an enviable faculty—one which shows what is very material in such cases—that *he understands his subject himself*. When men render things obscure and incomprehensible to plain minds, which before were only abstruse, we are apt to conclude it is because they have themselves no very clear conception of the nature of their subject—that is evidently not the case with Professor Mapes.

We entertained the purpose, on entering the room, to take some note of things the most admirable, and so, "with pencil in hand," memorandum'd—a magnificent display of *dahlia*s, in perfect form, and in every variety of color that nature presents in all her creations, or that the art of hybridization can intermingle at pleasure, exhibited by Edward Noice, of Princeton. The next thing noted on our card was a plate of very superb *pears*, first prize from "Grant Hill"—Edward A. Stevens. A lucky name this *Edward*, said we to ourselves, it must be granted; when we get another son, we will call him *Edward*. But now the

whole exhibition of beautiful and delicious things burst at once upon the view, and the idea of particularizing, where all was so admirable, seemed to be as impracticable as it would have been difficult, if not unjust, to discriminate. Where all is superlative, there is no room for comparisons. Such peaches! such pears! such grapes! and then such melons from Commodore Stockton's; and as for his cabbages, why for drum heads as large as the largest drum, and as solid as stone, Ex-President Van Buren, who is admitted to be great in "that line"—was nowhere. There's not their equal in all Kinderhook.

Jesting aside, we seriously doubt whether that celebrated tree in Paradise (Mohammed's, not ours), laden with such various and delicious fruits, and which was so large that, as we are told, a person, mounted on the fleetest horse, even Fashion herself, would not be able to gallop across its shade in a hundred years, bore any fruit so exquisitely fine as was displayed at Princeton; and as for the flowers—enough to say that their tints and perfume justified the exquisite taste with which the ladies had arranged them for exhibition. Though not venturing to discriminate, where all evinced a progress in horticulture so honorable to the State, and to all concerned in getting up the exhibition, there *was*, among many others to be admired, one living flower, that even a sexagenarian may be excused for dwelling upon, just as "a cat may look at a king." This flower, too, might be compared to one of the Hours of Paradise, with the exception and the *improvement*, that her eyes were *blue*, instead of black. Yes, we always thought, were we to write a Koran, and construct a paradise, seeking to make soldiers fight like devils incarnate, we would fill it with *blue-eyed* virgins; but there is no disputing about tastes, and who understood human nature better than the gallant son of Mecca? But what has this to do with the horticultural show? Well, not the worst part of this most agreeable holiday was the *dinner on the last day*, at Mr. Field's tasty cottage residence near the town, where he entertained the orator of the day, and a party of friends. Of a private entertainment it would not be proper to speak more particularly; yet such an one, in respect to its *horticultural* proportions and accompaniments, is a thing to be remembered! To say nothing of the heavy artillery used in the first onset and shock of battle, to blunt the edge of hungry combatants, the dessert that succeeded, like the music that comes after, proclaiming victory, was "*pertickler nice!*" The way that fat little reed birds came in flocks, in quick succession, and more quickly dispatched, might well raise again the question with naturalists—*what did become of them!* And as for the melons and the fruit—the peaches, the pears, and then *such grapes!* It might, even with allowance for his own well-known excellence, have been supposed, that the winners of the premiums had sent in their prizes, as in duty bound, to the table of the President of the Society, to vindicate the justice of its awards. Finally, all that we have room to scribble now is, when next they have their *horticultural exhibition at Princeton*, "*may we be there to see.*" So take notice, Mr. Secretary Cumming.

~~~~~  
 We find, in the "N. Y. Journal of Commerce," the following statement, showing the quantity of breadstuffs exported from the United States to Great Britain and Ireland during each of the past three years, ending September 1. Although the present year is not quite terminated, the figures will not be materially changed:—

| Years.     | Bbls. flour. | Do. Corn meal. | Buckwheat. | Do. corn.  |
|------------|--------------|----------------|------------|------------|
| 1846-7 . . | 3,150,689    | 847,280        | 4,015,134  | 17,298,744 |
| 1847-8 . . | 183,533      | 105,350        | 251,350    | 4,581,367  |
| 1848-9 . . | 1,107,313    | 80,742         | 1,128,766  | 12,466,513 |

~~~~~  
AMERICAN TOBACCO IN ENGLAND.—It appears, from the last returns made to the British Parliament, that there had been imported into that kingdom, during the year 1848, of tobacco 27,304,134 pounds; from which the government had derived a revenue of 4,365,233 pounds sterling, or 21,627,727 dollars. In other words, Great Britain levies a duty of between 79 and 80 cents per pound on our tobacco, which, after a year's labor, did not yield the planter more than an average of some four or five cents per pound.

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**EMERSON'S POINT.**—In our last number of the Plough, the Loom, and the Anvil, page 149, we gave some account of this farm. An error, which originated elsewhere, has been pointed out by a friend. It reads—"and this *place* he would have continued to *follow* but for the want of pasture." It should be—"and this *plan* he would have continued to *follow* but for the want of pasture."

## POSTPONEMENT OF THE NATIONAL COMMON SCHOOL CONVENTION.

It has rarely, if ever, happened, within our remembrance, that a national convention has been proposed for an object so high and holy in our esteem as the one to which the following notice refers—and we look upon the association with it of the name of Joseph R. Chandler, in the relation here disclosed, as auspicious of the best results.

At the suggestion of several State Superintendents and other influential friends of the cause of popular education in different sections of the Union, the meeting of the National Convention of the friends of Common Schools, which was to have taken place in this city on the 22d inst., has been postponed to the 17th of October, on account of the prevalence of the Cholera throughout the country.

Officers of Conventions or Associations which have appointed delegates, will please forward to the Corresponding Secretary the names of persons appointed as delegates.

By order of Local Committee of Arrangement,

JOSEPH R. CHANDLER, *Chairman.*

ALFRED E. WRIGHT, *Cor. Sec.*

Philadelphia, August 1, 1849.

If this nation is to be preserved from running the usual career of high enterprise, of increasing strength and expansion, of ambition and blood—falling as rapidly as it rose, into anarchy and despotism—it must be by more diffused systems of education, better adapted to instruct the people in the pursuits of peaceful industry, and the sources of true glory and virtue. For these, they must be taught in their very schools, to look, not to the use or the abuse of military establishments and forces, by which nations are ever liable, if not apt, to be plunged into war; but to such an exercise of their faculties, and such a use of power, as will best tend to the cultivation and reward of civil virtue and useful industry.

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## FOREIGN WOOL.

The market for wool is firm, and holders are still rather sanguine that an advance will occur. [The following is from last month's "London Farmers' Magazine." A thaler, or rix dollar, is 65 cents.]

LEEDS, Aug. 24.—The great confidence, expressed by those well informed, that present prices will be fully maintained, judging by the bareness of the continental markets and the healthy state of trade at home and abroad, has induced buyers to operate rather freely. Now that large supplies of German and other wools have just come into the market, we may confidently hope to see great activity in this branch of business.

BRESLAU, Aug. 22.—Rather more business than of late; all descriptions in good request, and steady prices. Country manufacturers and commissioners continue to be the chief buyers; but, besides, we have Rhenish, Saxon, and Austrian purchasers in the market. Fine Silesian clips fetched from 78 to 87 thalers per cwt.; fine Polish 65 to 75 thalers; middling fine 58 to 60 thalers; low ones 50 to 57 thalers; Russian wools 49 to 53 thalers; Hungarian summer wool 46 to 48 thalers; skin wool 55 to 65 thalers; slipes 45s. to 52 thalers; refuse 45 to 55 thalers. Lambs are still neglected, and good qualities to be had at from 70 to 80 thalers. In the whole, there have been sold about 2500 cwts.; but nearly twice as much has been brought in from Poland and Russia. The Berlin market is very lively, home manufacturers being the principal buyers. Low and middling wools at from 48s. to 62 thalers are in best demand; better kinds are likewise requested, and nearly 1000 cwts. of fine Prussian fleeces at about 70 thalers have been sold to an extensive English manufacturer. Reports from Vienna state that the wool trade there was in a very good position, and prices rising anew. Very large quantities of all descriptions have been taken out of the market by Austrian manufacturers, as well as by English, French, and Netherland firms. Nevertheless, it is believed that, in consequence of the approaching pacification of Hungary, provisions will become more abundant, and prices a little more moderate.—GUNSBERG, Wool-broker.

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An Englishman, having resided as manager of a grazing property in Jamaica for seventeen years, is desirous of giving his services for the consideration of board for one year, in the State of Virginia. Apply, postage paid, Post Office, Philadelphia, to T. H. H.



## THE COURSE OF PUBLIC OPINION.

Extract from "The Star of Temperance."

Jackson, Mississippi, July 31, 1849. Rev. R. MORRIS &amp; M. T. CARPENTER, Editors.

THIS fact, which is no ways derogatory to the highest usefulness of the Journals in question, yet made it necessary that there should be at least one Journal of general utility; one whose sphere shall embrace the interests of North and South, East and West, American and European. More than that. We needed an Agricultural Journal which should take up the Metaphysics, so to speak, of the subject; in other words, that should investigate the higher questions, and the profounder interests of agriculture at large. In short, we wanted a journal that should bear something the relation to the average of agricultural papers which the standard Quarterlies hold to Newspapers at large.

It is plain that this wish could not be fulfilled in a journal strictly neutral in political matters. Politics—which, formerly contented with a few leading subjects, now demands many minor questions and topics, that, ten years ago, were free for all of us to discuss—cannot now be touched without infringing upon partyism.

This makes it plain enough that an Agricultural Journal of the highest order, one that does not shun any question which can influence the Farmers' interests, must occasionally transcend the boundary which Politicians have rather presumptuously assumed as their own. With these preliminary observations, we approach the subject of "THE PLOUGH, THE LOOM, AND THE ANVIL," and declare as our opinion that this Journal fills the place so desired in the scale of Agricultural Literature.

Starting, three years since, under the title of "THE FARMERS' LIBRARY," it was found that the price, \$5, placed it above the ordinary reader whose good was mainly sought, and that some change to bring it within his grasp was necessary. This change of plan produced "The Plough, the Loom, and the Anvil" monthly at \$3 per year (or \$5 for two years, or for two subscribers for one year, or \$2 each, where five subscribers unite). The original projector and proprietor is the veteran John S. Skinner, the man who started the first Agricultural paper in the United States. At an age when most men retire, this gentleman rejuvenator in a new plan, and at a time of life when toil and economy have usually placed a man above want, Mr. Skinner finds himself, in spite of toil and economy, as poor as when, thirty years ago, he commenced his useful career.

But do not understand us that this plea of poverty is offered as a book-maker's right to induce any to subscribe for the work. Of all begging the most detestable is that of the author who palms upon us a poor book by dint of a poor face. "The Plough, the Loom, and the Anvil" makes its own face, and if to have good subjects well handled makes a pretty face, its physiognomy is elegant.

No. 1, of Vol. II., for July, 1849, is now before us, 64 pages, stereotyped with handsome covers. The conclusion of Vol. I. informed us that bound volumes to any extent could be supplied, and our first advice to the reader is, not so much to subscribe for Vol. II., (although that is desirable,) as to buy Vol. I., read it thoroughly twice, and place it as No. 1 in your Library, for children and friends to read.\*

If this is done according to our advice, we know very well that the next step will be to send Skinner his money for Vol. II., and then as long as the firm of Skinner and Reader shall exist, there will be advantage and pleasure ever increasing to both parties.

There are more than 350 subjects carefully and elaborately discussed in Vol. I., and so prolific is the Index in good and suitable topics, that we will almost agree to give a year's subscription to any body who can think of anything interesting to a Farmer, which Skinner has forgotten. One word concerning the political character of this Journal.

It is known that certain party papers have recently opened their batteries against it as being one-sided on the subject of the Tariff. Now, no one who reads our paper will suspect us of a disposition to depart from our neutral attitude; and we venture to declare that "The Plough, the Loom, and the Anvil" takes up no subject that does not come strictly within the range previously marked out; and that the topics about which this controversy has arisen are those which party politicians have no right to whatever. We neutrals must begin to assert our rights, or the next thing will be that we dare not discuss the most familiar subjects, for fear of being styled Democratic Whigs or Whigocratic Dems. Go ahead, Mr. Skinner, in the way you have begun.†

And you, worthy reader, after perusing this article, take out \$3 (exactly the amount of your smoking and chewing account for one month), and pay it for "The Plough, the Loom, and the Anvil," and if, at the end of the year, you can start a single well-founded objection why you should not subscribe again, call on us and we will take it off your hands. We shall notice the future numbers of the work, and continue, as we always have done, to copy the best pieces into our own columns.

\* It may be had, well bound, for \$3.—Editor *Plough, Loom, and Anvil*.

† If the Editor of the *Plough, Loom, and Anvil* does not prove that the question of encouragement to American labor is one which no man has a right to drag in the mire of party—and that Jefferson, Madison, Monroe, Adams, Jackson, Tyler, and Taylor—all, except Messrs. Van Buren and Polk, have been in favor of it—then he will "confess the corn!"

## AGENCY FOR NEW ENGLAND.

Mr. M. P. Parish is our Agent for The Plough, the Loom, and the Anvil, for the New England States. All orders for this work, except for present subscribers, at Providence, Rhode Island, and all remittances for the same, from those States, should be directed to him. His address is, 23 Cornhill, BOSTON.

## VIRGINIA.

To all persons in Virginia, for whom subscriptions may be forwarded to us by J. B. PLEASANTS, *The Plough, the Loom, and the Anvil* will be regularly sent.

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## SHEEP HUSBANDRY IN THE SOUTH;

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## ACCLIMATION OF SHEEP IN THE SOUTHERN STATES,

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I wish to remind the Farmers and Planters of the Southern and Western States that I still continue to purchase and sell improved Stock, such as Cattle, Sheep, Swine, Poultry, &c., of the different kinds and breeds, at a reasonable commission. They will be carefully shipped and sent away as ordered.

All letters, post-paid, addressed to me at Philadelphia, will be attended to without delay.

AARON CLEMENT.

*Philadelphia, Jan. 12, 1849.*

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AND

## DICTIONARY OF RURAL AFFAIRS;

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Barrister at Law; Editor of the Farmer's Almanac; Corresponding Member of the Agricultural  
Society of Königsberg, the Horticultural Society of Maryland, etc. etc.

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BY GOUVERNEUR EMERSON.

An imported copy of the English edition of this work, in one volume, would cost about \$14, and then not have a single one of the 17 plates added to the American edition, which costs only \$4, nor contain about forty per cent. of matter relating to the great American staple crops, with descriptions of all the American forest trees, native plants, destructive insects, etc. etc. This shows the great advantage the American has over the European purchaser; our countrymen, desirous of improving themselves, being able to procure, at a comparatively small price, this standard work, filled with the latest and best information relating to practical farming, and all the interesting concerns of country life.

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The good will, inspired by personal intercourse and dealing with Mr. Kuemerle, prompts the Editor of the Plough, the Loom, and the Anvil to express great confidence in his professional skill and individual respectability.



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Particular attention will be given to the *location, selling, and loaning* of Land Warrants, and to procuring Warrants for soldiers who served in the Mexican war, or late war with Great Britain.

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A full set of maps of the Government Surveys will be kept in the office—and county, township, and district maps will be furnished to order. A *practical Surveyor* will be connected with the office, who will be in readiness to show Government and other lands to strangers, and to furnish an accurate description, as to quality and location, of all vacant lands.

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In fine, the undersigned feels confident that he can give satisfaction to any and all persons who may choose to employ his services.

AUGUST 7, 1849.

BERNHART HENN.

 Office, North Side Public Square, next door to National Hotel. 

We were introduced to Mr. Henn in a manner to inspire perfect confidence, and all subsequent intercourse has served but to confirm and ratify it.—*Editor of the Plough, the Loom, and the Anvil.*



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HENRY J. ROGERS, *General Superintendent.*

We have pleasure in giving publicity to the existence of the above establishment throughout the length and breadth of the land, because at it we have always met with civil and effective attention.—*Editor of the Plough, the Loom, and the Anvil.*

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For people young, or people old,  
You'll find at OAK HALL, in Ann Street,  
Where Simmons fits out, all complete.  
There's not, sir, in this world so wide,  
A firm on which you may confide,  
Like him to suit you, *cap-à-pie*,  
As you will say, when once you see  
Yourself reflected in his glass.  
You'll wonder how you e'er could pass  
A Store, whereat men all admit  
They beat the world, for a good fit.  
The wonder—if you knew the man,  
His genius; and how soon he can  
Tell what suits, and what does not,  
According as you're tall or short—  
Is not that he can make you feel  
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How *cheap* are all things at OAK HALL!  
All things I say, as you'll agree  
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Precisely as he advertises.  
Nay more, sir, they excel his statement,  
Without allowance or abatement;  
No man who bought, in his Rotunda,  
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Of Boston wonders, *crowns* them all!

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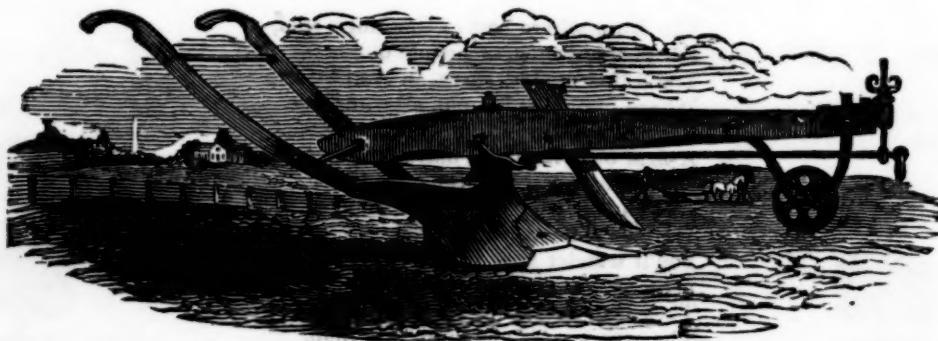
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"Orem & Hopkins are the men for my corn;  
'Honor bright' is their maxim in trade;  
To 'cabbage,' they'd scorn no men ever born;  
Are more true to a promise when made.

"And as for a suit—of gray, black, or blue,  
Go be measured—and then be at rest;  
In material—in time—in all they'll be true,  
And your clothes, sir, you'll have of the best!"



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ACCLIMATION OF SHEEP IN THE SOUTHERN STATES,

AND

AN ACCOUNT OF THE DIFFERENT BREEDS.

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SECOND EDITION.

PHILADELPHIA:

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1849.



## THE PLOUGH



## THE LOOM AND THE ANVIL

J. S. SKINNER, EDITOR.



PHILADELPHIA:

J. S. SKINNER, 79 Walnut Street.

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